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HISTORY IN RELATION TO THE FORMATION OF CHARACTER[1]

PROFESSOR MAX MÜLLER has remarked that the ancient Hindus, while worshiping a multitude of gods, were not in reality polytheistic, since whichever god they happened to be worshiping filled their minds for the time being to the exclusion of all other gods, and was hailed as the sole creator, preserver, and ruler of the universe. For this intense but passing devotion to an endless series of deities he coined the euphonius name Henotheism. Is it a fancy or is it a fact that a visitor attending in turn the various sections of a pedagogical conference and noting the supreme importance successively assigned to every subject in the curriculum, would be tempted to discover a striking similarity to the ancient Hindu religion? Doubtless this tendency in human nature to magnify the object of interest has its uses, since, without it much of the inspiration would be gone from life, and the drudgery of the world would be neglected. Nevertheless, it is a great impediment to clear and sane thinking, and above all, in the matters pertaining to education. For this reason and in the hope of maintaining a truer perspective, it is advisable, before attempting to state the relation of history to character building, to glance briefly at some other factors in the process.

[1] Read before the Northern Illinois Teachers' Association at Dixon.

The character of each individual, as of each nation, is a resultant of many and diverse forces. First of all and underlying all, is the blind brute power of heredity. For good or evil the character of every child is largely formed before it comes into the world. It is still true that the sins of the fathers are visited upon the children unto the third and fourth generations. Every teacher knows children that have come from the cradle with the stamp of vice upon them — children whom the teacher, conscious of his own impotence to save, can only commend to a higher power. But fortunately such cases are the exceptions. The ancestry is seldom consistent either for good or bad, and the ancestral forces that meet in the child and struggle there for mastery are usually in such a condition of equilibrium that a decisive influence may be exercised by the second great factor in the formation of character — environment, including under this name both natural surroundings and human association.

The influence of nature upon character is subtle and intangible but none the less potent. All history demonstrates the reality of its power. The legend of the Great Stone Face contains a profound truth. And the myth of the Giant Antaeus, who gained new strength from each contact with his mother earth, is more than a myth. There is a largeness and serenity in nature which is not in man, and he who would grow to his full stature in brawn and brain must live at least his early life in close contact with nature. Only saplings grow in thickets; great personalities are not developed in a crowd. Man, like the tree, must have room to breathe and grow or he will be stunted in body and mind. For this reason most great men of the modern world have been country bred and passionate lovers of nature. Through its beauty and majesty and serenity, silently working upon the impressionable character, nature arouses feelings and sets in motion forces whose presence and potency no one suspects until the hour of trial tears away the trappings and reveals the man, serene and masterful in the shock of battle, swaying a nation by his eloquence when mighty issues tremble in the balance, or victorious in the conflict of self with self for moral right and civic duty.

Of the various forms of human association the earliest is by far the most important. Where the home life is pure and wholesome, untainted by coarse materialism or refined selfishness, it matters little what other influences are brought to bear. But it is a notorious fact that many children receive from the public school their first and only conception of law as something distinct from their own will. It is this collapse of home discipline, as Professor Rein has pointed out, together with the failure of the church to reach or hold large classes of people that has thrown the task of ethical training upon the public schools. The demand for ethical training is a symptom of its lack, as the "teaching" of patriotism is a symptom of its decay.

In consequence of this need it falls to the school to gather up and hand on to succeeding generations not alone the collected knowledge of the world but also and chiefly its culture, its ethical and social ideals. And this new conception of education as above all an ethical process necessarily leads to greater emphasis upon those studies which contribute most directly to that end. Without denying the value of other subjects, it is evident that this is preëminently the case with literature and history: and these, consequently, have suddenly become the core of the curriculum.

Literature, however, is largely personal and subjective in origin and content. This fact is the source at once of its strength and of its weakness as a factor in ethical training. On this account literature is most effective in bringing the student to a full consciousness of self, and in forming his strictly individual ideals: but the resulting spirit of individualism if carried to excess becomes distinctly anti-social. This spirit which inspired the words of the Greek sophist, "man, the measure of all things," is cosmopolitan rather than national, individual rather than social, negative rather than positive. This result is not reached in every age nor by every author, but the tendency is unmistakable. After Æschylus and Sophocles came Euripides, and finally Lucian; after Shakespeare came Dryden, Pope, and Swift, the English Lucian who drew the logical conclusions of extreme individualism.

In contrast to this subjective and atomistic tendency in literature, history is more objective and universal. To the experience of the individual, history prefixes the experience of the race, freighted with dear-bought wisdom. Ethical precepts have been evolved by the experience of ages; and only by experience, personal or vicarious, can one learn their imperative force. The task of education is largely to substitute for the personal experience of evil, which is too slow and perilous a teacher, the experience of others, as recorded in history. In the lives of men and of nations the sequence of moral cause and effect is clearly revealed. The content of history is thus an ethical content; and, by assimilating this content, each generation may begin its own experience on a higher plane than its predecessor. This is at once the method and the meaning of progress. For this reason history was defined by Dionysius of Halicarnassus as "philosophy teaching by example;" by Diodorus as the "handmaid of Providence, priestess of truth and mother of life;" by Cicero as "the witness of times, light of truth, mistress of life;" by Comenius as the "eye of life;" by Schiller, in the well-known line (Die Weltgeschichte ist das Weltgericht) as the "Nemesis of nations, executing righteous judgment;" and by Droysen, in most inspiring and suggestive words, as "the *γνῶθι σεατόν* of humanity."

History thus furnishes ethical precepts in the most convincing form, viz., examples. It also embodies ideals, not less than literature; not the ideals of individuals, but of classes and of nations; ideals which have had the power to get themselves transmuted into deeds and institutions. And it supplies, furthermore, the inspiration which transforms precepts and ideals into life and character. The function of history as the source of ideals and of inspiration has never been set forth more clearly than in a famous passage of Cicero's *Pro Archia Poeta*.

"If I had not been persuaded," he declares, "from youth up, by the written precepts of many authors, that there is nothing in life greatly to be desired except the renown of integrity, and that in the pursuit of this all sufferings of body and all dangers of death and of exile should be held of little account, I would

never have exposed myself, in behalf of your safety, to so many and so great contests, and to these daily attacks of wicked men. But all the records, all the words of the philosophers, all antiquity are filled with examples. . . . . How many character pictures of the most renowned men the Greek and Latin writers have left us, not only for study, but also for imitation! Keeping these in view, in the administration of public affairs, I trained my mind and heart by meditation upon most excellent men."

But important and inspiring as is the personal or biographical side of history, so eloquently described by Cicero, the true theme of history is not the individual, nor any number of individuals, but the race. It is the biography not of men, but of man. It deals primarily with the development of organized society, in all its phases, and is therefore above all a social discipline whose chief purpose and result is to reveal the connection of the individual with a larger social whole. By revealing this connection, history acquires a fivefold value in respect of character formation. In the first place, it constitutes the only solid foundation for rational patriotism and good citizenship. Only as men learn by what slow and painful steps civilization has advanced, and at what fearful cost those blessings have been bought which they now enjoy as freely as light and air, can they appreciate their value, or feel the sacred obligation to preserve them undiminished for posterity. Secondly, it is chiefly through the study of history that those common ethical and social ideals are instilled which unite all classes and many races into one nation, and constitute the animating spirit or soul of the nation. History is the crucible in which all the diverse elements of humanity are fused together by the forces of nationality. Thirdly, history is the only avenue of approach to an understanding of the present organization of society. History is not past politics alone, as some have maintained, but past life; whence it constitutes the common basis of the entire group of social sciences. The study of history is the study of life. It is life in contact with life, mind in contact with mind; the life and mind of the individual with the life and mind of the race. In history each reads the past achievements of the race whose

traditions he is to pass on to the future, sees the stops by which all that is has come to be, and learns to know himself through knowing what has preceded and produced him. Fourthly, the study of history leads not only to a clear understanding of the present, but also to a right outlook on the future. It tends at once to a wise conservatism and an ordered progress. The student of history knows full well that liberty and union — that is, liberty and law — are one and inseparable. He will not encourage revolution, nor pin his faith to social or political panaceas; for he knows that Rome was not built in a day; that the roots of the present lie deep in the past; that no nation has ever prospered which has cast off its traditions and cut loose from its past; and that those who respect not their ancestors will be justly reviled by their descendants. On the other hand, the student of history will never listen to the whisperings of blind reaction or dark pessimism; for he knows that throughout the ages, the old order has been forever changing, yielding place to the new; and he knows also that in spite of all the apparent checks and reactions the course of progress has been in the long run, constantly onward and upward. Finally, it is in history that the unity of the human race, the social bond binding past, present, and future, comes to consciousness. In history, the individual watching the rise and fall of nations, hearing the voices that speak to him from the silent past, and feeling the impress of the living present, comes to realize that he is a part of a larger whole, of a social process that began in ages beyond history, that dominates the present, and will dominate with increasing power the future; a process whose beginning and end no man can conceive, whose purpose is known only to the Great Artificer, but with which every man may coöperate and feel, weak and limited though he be, that he is an instrument of "that power not himself which makes for righteousness." Like the crusaders of old he may again cry *Deus Volt.*

To summarize; character is the resultant of two forces, heredity, which is beyond our control, and environment, which may be modified by human forethought. In the latter lies the possibility of an ethical education. Environment consists of natural

surroundings and human associations; both exerting a powerful pressure on character. Of human associations, the family is the most influential; but its partial decay has thrown the proper function of the family upon the school, hence the demand for an education having primary reference to character. Such education may be obtained, in a measure from all subjects, but most readily and effectively from literature and history. This explains their sudden and unprecedented prominence in the schools and in educational discussions. Literature is the most efficient in developing the consciousness and training the character of the individual as such; but for this very reason its tendency is subjective and cosmopolitan rather than objective and national. The tendency of history, on the other hand, is in precisely the opposite direction, so that literature and history constitute, in this respect, the educational complements of each other. The content of history, as of literature, is ethical: through it the individual enters into the experience, the ethical heritage, of his race. But unlike literature the ideals embodied are objective and the inspiration is drawn from deeds, not words. History moreover, is distinctively social: its function is the development of character with reference to life in organized society. It is the foundation of patriotism and good citizenship; it diffuses the ideals which unite the people into one nation; it leads to an understanding of the present organization of society; it gives a clear and sane outlook upon the future, combining conservatism and progress; it causes the individual to feel himself a part of a larger social whole, an instrument of a Higher Power.

Is it asked how much of this may be accomplished in high schools? I would answer, all of it. History cannot be well taught, as it is in many schools, without accomplishing, in some measure, all of these results, even though not one of them is consciously present to the teacher's mind. It is true in school, as elsewhere, that the things we do best are often those we think least about. The best teaching is done when the teacher is eliminated and the mind of the pupil confronts the facts of the universe and of history, face to face.

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THE PLACE THE SUBJECT OF FORESTRY SHOULD OCCUPY IN HIGH SCHOOL INSTRUCTION

DURING the winter which has just passed I delivered a lecture for Dr. Charles DeGarmo, of Cornell University, on the place forestry should occupy in high-school instruction. The class consisted mainly of teachers, and the course, of which the lecture above referred to was only a very small part, consisted of lectures by various educators on high-school instruction.

At first thought the majority of well informed individuals would say that forestry deserves no place in the already overcrowded curriculum of the high school. After I had made my position clear the opinion of the class seemed unanimous that some forestry, at least, should be taught in connection with, or as a part of, geography in high schools. A few at first argued with reason that if forestry should be taught, agriculture and a host of other subjects deserve a place. These persons, however, failed to realize the important rôle which the forest plays as a geographical agent in checking the destructive forces of nature, modifying the nature of the earth, and in molding the nature of the occupations of its people.

Forestry may be classed in two ways—first as a profession and second as a subject of general interest about which every well informed citizen should know something. In the first case the nature of the instruction should be detailed and technical and should cover a period of at least four years. This sort of instruction belongs to schools of forestry and agricultural colleges. There are already two schools of forestry in this country—one at Cornell and the other at Yale University. There are many such institutions in Europe. It is to these schools where a student must go in order to become a professional forester. It is in such institutions that a student is taught how to properly form, tend, and utilize a forest. In addition to learning how to care for forests, he learns also how to survey, construct wagon

roads and logging railroads, operate saw mills, etc. He is, in other words, a forest engineer.

In the second case, for the acquisition of knowledge of a general nature relating to the forest which every man and woman should know, the high school is the place. All are agreed that in case it should be taught at all it does not belong below the upper grades of the high school. It is also so that a very large proportion of our high-school graduates would never acquire such a knowledge unless they get it in the high school, because many of our high-school graduates never go to colleges and universities and because many of our colleges and universities do not offer instruction in many of the most important subjects. There is no subject, for instance, of more general interest and of more importance than ethnology, yet how few even of our great universities offer instruction in this subject and how few of their graduates know even the names, to say nothing of the natures, of the peoples who once inhabited America.

It is not my intention to suggest the addition of another subject to the high-school curriculum. It should be given, however, the place in physical and commercial geography to which its importance entitles it. It is very easy for a man to exaggerate the importance of his specialty. Few doubt, however, the importance of forests. As compared with Europe, general information on the subject is wofully lacking throughout this country. Very few know the meaning of forestry. Arbor Day celebrations have done much to stimulate an appreciation of trees but these celebrations are often farcical, if not misleading, in nature. A song is sung, poetry recited, and then a few trees, often only one, are carelessly stuck in the ground, often in the very place which should be left open. A very small proportion of these trees live, however. "O, Woodman, Spare that Tree" is sung. A forester never hesitates to cut a tree if it is ready to cut, but he always plants more and plants them well. Aside from this question of Arbor Day, an institution which has been adopted in many parts of the world and which will do lasting good if properly conducted, why should forestry be taught in high schools? First of all, every great movement in this country

must have popular support back of it. Our people must be educated to a point where they will know the advantages of a forest cover and the meaning of forestry. When this occurs the future of forestry is assured. The main cause of reckless, wasteful forest destruction in this country is ignorance. It is certainly one of the functions of the public school to overcome this difficulty. It is not necessary to introduce forestry into the public schools of Germany because forestry is born and bred into the body of every German. The proper care of forests is there a matter of course. Secondly, why does it deserve a place in high-school instruction in connection with geography?

I can only mention, in passing, the importance of the commercial side of the question. Think of the great lumber industries of the North, South, and far West, of the hundreds of thousands of railroad ties, telegraph poles, and bridge pilings, of the immense amount of wood used in construction for houses and fences and the hundreds of industries which make use of it. Think of the rubber forests of the tropics, the naval stores industry of our South and maple sugar of the North. Think of cork, camphor, rubber, wax, dyes, medicines, and a host of products yielded by the forest in various parts of the world. The young man about to enter business should, in fact must, know something of these products. It is of interest to note in this connection that two mahogany logs sold for $5200 in Liverpool last year. These logs came from Africa, and were purchased by an American.

It is not, however, on this side of the subject that I lay special stress. Although this is a part of commercial geography and although every young business American is eager to learn of the products, industries, and occupations of every country, the side of the subject which relates to the influence of the forest in molding and beautifying the earth is of much more importance and much more in place in the geography of the common high school.

There is too little space for me to define it except in a general way.

1. The forest is a soil former. Vast areas of swamp lands

consist of the black decayed remains of the forest. One tree in the tropics called the mangrove grows in salt water on the edge of coral islands. So much land is wrested from the ocean by its aggressive growth that it is often called the "landformer." The same is so of the willow, that Cinderella of trees, in northern latitudes. Trees cause the disintegration of rocks. The acid produced in the decomposition of organic matter causes the rock to crumble into soil. The tips of roots dissolve their way through soluble rock. In coral islands large trees may be seen growing out of the solid rock.

2. The forest is a soil improver. A virgin soil is a soil rich in leaf mold. The roots of trees penetrate to the deep layers of the soil and secure rich mineral matter, which is deposited on the surface with organic matter in the form of leaves and sticks. The only way to bring virginity back to a worn-out soil is to grow a forest on it.

3. The forest is a soil fixer. Erosion is the wearing away of rocks and soil by wind and water. Shifting dunes, sandstorms, landslides, and avalanches are prevented by a forest cover. The mass of roots holds the soil in place. Many countries have been rendered inhabitable by the planting of trees. Whole villages have been destroyed in Europe by landslides and shifting sands. This has been prevented by forest planting.

4. The forest is a flood preventer. The flow of water is retarded by the roots and litter of the forest floor. A flood to be conquered must be attacked in the hills of its source where its forces are scattered and easily controlled. The way to conquer it is through the agency of forest growth. The forest imparts a regularity to the flow, so that there is less high water in wet seasons and less low water in dry seasons. This means much to industrial establishments along the banks of a stream depending upon its flow for power. Snow melts slowly in the shade of the forest.

5. The forest is a windbreak. Nothing is more destructive than a hot dry wind. It blasts and levels crops. It parches the ground. Nothing is more wearisome to man and beast. Nothing is more grateful than the shelter of a belt of trees.

6. The forest beautifies the earth. The ideal country is the one in which there is proper mingling of forests and fields—forests in the mountains and fields in the valleys. A treeless country is distressing and monotonous.

7. The forest is a sanitary agency. Malaria follows in the wake of forest destruction. The purity of forest air is proverbial. It is a resting-place for busy brains. It is the source of good, pure water for many large cities. The war department is planting Eucalyptus trees in Havana province to prevent malaria and yellow fever. This has been done elsewhere with considerable success, especially in Italy and Algeria. The Landes of France was once a pestilential swamp. Since the planting of pine trees it has developed into a health resort. A forest occupation is healthy. It produces strong, broad-chested men. Would that a large number of our population could find employment in the forest.

Another branch of the subject which is of interest from a geographical standpoint is the geographical distribution of forests over the face of the earth—why are there forests in one place and deserts and plains in another? What are the forces which cause the spread of forests and what are the barriers which prevent or restrict their growth? There are many aids to forest extension, such as winds, currents of water, animals, and man. There are many barriers which restrict their growth, such as cold, drought, unsuitable soil, strong winds, animals, and fire.

There is still another phase of the subject which is of importance to the geographical student. Every American should have some knowledge of our great forest reservations and national parks.

These reservations have been set aside for the preservation of the timber and natural curiosities and extraordinary scenery, and for the conservation of moisture, since in many western districts agriculture is impossible without water for irrigation. These reservations cover an area of almost 50,000,000 acres, a territory so large and varied that it is worthy some space in even primary geographies. There are 640 acres to the square

mile—there would be then 78,125 square miles in these reservations. They cover an area much larger than the whole of New England states, three times as large as Greece, and almost five times as large as Switzerland.

The establishment of these reservations has apparently only just begun. A great park in the Appalachian Mountains and another at the head waters of the Mississippi in Minnesota will be in time established.

Already the State of New York owns a vast tract of land in the Adirondacks, and more is being purchased, for the preservation of the forests and game.

Under the circumstances, few can doubt that the subject is worthy a large place in our secondary schools and in the minds of our people.

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THE DIFFERENTIATION OF ZOÖLOGY FOR THE HIGH-SCHOOL AND COLLEGE CURRICULUM[1]

HIGHER education in the United States has resulted in the differentiation of three grades of institution: the high school, the college, and the university. Zoölogy is taught in all of these grades, and there is danger lest the proper sphere of each shall not be clearly defined, and so a loss of the students' energy result. It is the object of this paper to attempt to find tests by which to determine the respective sphere of college and high-school zoölogy.

The growth and development of a zoölogist presents three stages: first, an introductory stage in which observations are made over a wide horizon without the inner data of the subject being examined in much detail. Then a second stage of exact and careful acquisition of the existing knowledge of the subject. Then the professional and creative stage in which the student changes into the master, though always remaining a student, and joins the number of those who are engaged in the work of pushing the boundaries of knowledge out into new realms. There would be a great economy of his time if the zoölogist could be advanced successively on each of these stages in the high school, the college, and the university, and I believe that such a succession in the presentation of the subject would be better at the same time for the interests of a general education than any other.

The work of the first or introductory stage is to gain a first-hand and correct knowledge of representative members of the chief animal groups. They must, as many of them as the locality permits, be seen alive and in their native homes. Their activities, food, enemies, and relation to man should be learned, their outward forms and parts carefully observed, and all this

[1] Read before the College Section of the Minnesota Educational Association, December 29, 1900.

should be recorded by means of correct drawings and descriptions put up in permanent form and preserved and used for subsequent reference. The work should further include the making of and caring for collections of examples of the animals studied, which collections should be incorporated in a museum that should be a permanent part of the high-school property. As any given locality will furnish only a limited percentage of the groups needed to a complete idea of the animal kingdom, it will be necessary to supplement the native fauna by means of specimens purchased of supply dealers. These are not very costly and are indispensable to an adequate grasp of the subject.

A list of the names of some of the principal animals needed to operate such a scheme is as follows: hydra, coral and the coral polyp, the flat-worm, the fluke-worm, the tape-worm, trichina, the earth-worm, the sand-worm, the cray-fish the brine shrimp, the spider, the grasshopper, the potato-beetle, the louse, the tick, the bed-bug, the fly, the ant, the honey-bee, the clam, the snail, the squid or cuttle-fish, the perch, the frog, the lizard, the turtle, the snake, the English sparrow, the pigeon, the cat, dog, horse, cow, bat, whale. Many of these are common in all parts of the United States. An exact knowledge of the external features of them all and of their homes and habits would be of the utmost value to the beginner of a course of college zoölogy.

If children are permitted they will get much such knowledge, as their senses are wide open nature-ward by instinct. It is now being somewhat cultivated by "nature-work" in the common schools. The elements thus acquired should later in the high school be gathered up and transmuted from common knowledge into science, by arranging it in the form of an accurate and complete system. Its incomplete and incoherent data would be collected and supplemented by fresh facts and the whole become the living body of useful and reliable knowledge.

Such elementary knowledge of animals seems to us also to be eminently suitable to the pupil of high schools, and the methods employed in its pursuit have high educational value. It imparts information which will interest him all the rest of his life and save him from such mediæval absurdities as supposing

that coral is made by insects, horse-hairs turn to worms, that bats are birds and whales are fish. It will keep him from eating raw meat and endangering his life from parasitic diseases. It will help him to cope more effectively with noxious insects and other pests. It will explain to him the souring of milk and the putrefaction of meat. It will give him a scheme for the retention of all the information about animals that he may receive later, and greatly widen his interest in all aspects of nature and life. It is about all the zoölogy he will ever care to know. Very few people care for the many and hidden details of college and university zoölogy, but most people are interested in the facts of natural history. This is demonstrated by the popularity of zoölogical gardens and aquaria, as well as by the sale of books on the subject. And yet this is a phase of zoölogical science that the high schools do not teach. Where the high school gives a course in zoölogy it is usually made up for the most part of work that more properly belongs to the second stage of advancement in zoölogical training, but given in such a way that it is nearly or quite useless to its possessor. Students entering college from high schools where zoölogy is taught are actually worse off than those who have never studied it at all. I have repeatedly been obliged in such pupils to contend against vicious habits of laboratory work, pernicious mental habits and outlook, and a lack of interest in the subject, growing out of the fact that the subject has previously been skimmed over, and hence lacks the interest which it has for the members of the class whose zoölogical life has not been prematurely blasted. This has been caused by the high-school course in which instead of introductory zoölogy being given, a smattering of college zoölogy had been attempted.

It is not difficult to account for this state of affairs. It is known that 95 per cent. of the students of the high schools never attend college, and to meet their needs it has been supposed that a glimpse of the college courses will be of great value. I believe that this idea is an error. It contains two fallacies: (1) the assumption that introductory zoölogy is less useful than college zoölogy, which I do not believe to be the

case, and (2) that college zoölogy can be taught without an adequate natural-history introductory course, which is also false It also falsely supposes that knowledge so-called is of more value in education than training. Glimpses of college zoölogy give very little useful training to the high-school student, and they do not give him the kind of knowledge that will be of the most value to him.

Zoölogy in the college curriculum should not be high-school zoölogy. So long as the high schools continue to send to college pupils who have not been given preparatory training in the subject the college will be compelled to give that training, for college zoölogy must rest on a foundation of natural history knowledge; it is absolutely indispensable to every step of higher zoölogy. College zoölogy differs from it in being intensive rather than extensive. It includes natural history, being the greater which always includes the less. It adds to elementary knowledge of the chief parts of an animal, a careful exploration of its inner and hidden structures. This means a detailed personal examination of the various members of the digestive, circulatory, respiratory, muscular, nervous and other systems, and a recognition of their relations to one another, so as to form a complete being. It includes a study of the development of the animal from the egg, and a comparison of it with nearly related animals. A course of college zoölogy today which did not include such studies of animals from a large range of the natural groups of the animal kingdom would not be entitled to recognition as college zoölogy.

College zoölogy like all zoölogy must be largely laboratory work. The student must have his own table and tools and material and must get his information from the specimen by *practical studies upon it.* The more difficult technique should be reserved for the second year's course but many simpler histological and anatomical processes should be performed so that familiarity with technique will have a chance to grow. It is well recognized that even a poor preparation which the student himself makes will have more educational value to him than high priced cut-and-dried preparations that he has not made

himself. The latter can be used as supplementary but should not usurp the place of the former. Besides this the student should be constantly practicing for the research work that comes in the professional course, by drawings and written descriptions of the work that he is doing. It is difficult to overestimate the value of this aspect of zoölogical training; its importance is testified to by all zoölogists and while it is time-consuming and slow it has the great advantage of being sure.

Such a course is a full year's work and I should recommend that it be given in the sophomore year. It is foundational for subsequent courses, some of which may at first seem to be wholly unrelated. Besides being indispensable to the student of advanced zoölogy, it is also close to the beginnings of physiology and medicine, and extremely helpful if not necessary to intelligent work in psychology, anthropology and other kindred subjects. President Stanley Hall says that he began the study of psychology with a three month's course on the structure and physiology of the frog's leg. And considering the introduction to nerve and muscle that is gained thereby a zoölogist can see that he did a very profitable thing.

College zoölogy should extend over more than one year. To develop mental culture deserving of the name any course should be organized so as to provide for two or three years of consecutive work, and higher work of such a character as would be impossible without employing the data and habits gained in the earlier courses, should be given. True scholarship cannot be cultivated by continually beginning new and unrelated subjects. To attain it a student must continue month after month brooding over a subject till it has been given time to grow into him, and he has really acquired its point of view. Growth mentally is very much the same as growth physically. It is a process of integration in which lower units are slowly developed to form higher. In the living world we have first the cell, then very simple cell bodies, then compound organisms without differentiation, then comes the subordination of parts to the whole and the development of many members with different offices. The second year of college zoölogy must be so planned

as to integrate the data of the first year into a higher unity. Its powers should be re-employed and strengthened; its goal is a higher level attained, from which to get a more adequate idea of the science and its problems. The particular work suitable to such a course would include more thorough study of a limited group of the animal kingdom as for example the hydroids, the annelids, or the crustacea, and the thorough study of some central form. The work should by degrees become focalized on some special problem new to the student, though one perhaps which has been solved by some investigator, and the student should be set to work to repeat the work of that investigation. Such a course will open his mind to the regions that are beyond the beaten paths, paths marked out in the text-books. They are a step beyond, a step in the direction of the fields of original research. The course will require increased originality of thought to enable the student to apprehend his work, and will bring into play the higher and more exact technical methods on the successful practical knowledge of which everything depends in professional zoölogy. The *camera lucida* and the micrometer and micro-measurements will be necessary, the microtome and serial sectioning must be in constant use, the use of methods of staining in its more refined application to the differentiation of parts of cells and tissues will be practiced. All of this technique will be a great value to the student later in his career, should his later education be along biological lines, and is extremely valuable for its disciplinary bearings, in case he should not after leaving college pursue a biological career.

Zoölogy in the college curriculum should not be university zoölogy. It is perhaps less difficult to distinguish it from high-school zoölogy than from university zoölogy. The advanced zoölogy of the college course shades so insensibly into the university zoölogy that it is perhaps impossible to draw any absolute and universal boundaries. It is not infrequent that a student in advanced college zoölogy pushes his enquiries out toward the unknown so far as to pass their limits. It is possible that the unknown for him may chance to be the new to science. Nothing is more stimulating to the student than to feel that he is

thus on new territory. Nevertheless I do not believe in colleges undertaking to train students to be investigators, because with the appliances that are possible to most colleges with very rare exceptions it cannot be adequately done.

Zoölogy is a comparatively new science, and it may be a matter of surprise to some to be told its dimensions. In short, zoölogy is the study of animals. But, in fact, it is the study of almost every conceivable way of looking at animals and gathering facts about them. It consists, to mention some of the more important departments briefly, of the accurate description of the adult form of every animal known to man, and of the discovery of new ones. All the time, as new places are more carefully explored and as methods of search improve, we are finding animals hitherto unknown. All of these must be described, and this is done in a degree of minuteness that would greatly surprise the laity. It is no unusual thing to find that a microscopic animal is the subject of a monograph of fifty pages and many very carefully made plates. The accuracy involved in this work is very surprising. Then the animal must be known in all its various developmental stages. Its home and friends and foes and habits must be as fully ascertained as possible. It is quite possible that in such knowledge may be concealed very important suggestions bearing on the higher problems of cause which constantly lie just beneath the surface in the zoölogical student's mind. The study of structure runs into the minutest microscopical structure of the cell, or cytology, of most fascinating interest and of the utmost philosophical importance, as it is generally believed that heredity and the cause of species and their evolution are to be found here if anywhere. Then there are wonderful studies in mechanical lines, as made by removing parts of a developing animal and grafting those of other animals in their place, or leaving the mutilated specimen to develop. Wonderful powers of restoring the missing part are, in some instances, encountered, and the forces that we call life are viewed at close range here, though they remain still just beyond our ken. Then there is the life of the rocks, palæozoölogy, and the distribution of animals and their relation to

the agricultural pursuits and other industries of man; their artifical propagation and breeding for various domestic purposes. Then, too, now and again some student of zoölogy discovers or invents a new method of research, a new reagent, or new glass, or a new microtome, and as these improvements come into existence much of the knowledge of the past stands in need of revision. Not many years since two new methods of studying nerves came up, and they made such a change in our knowledge of the nervous system of all animals in all parts of the animal kingdom that only the coarser facts previously known are any longer accepted. So that animals need re-investigation from time to time.

This work is the professional occupation of a large and increasing number of men. There are perhaps twenty-five zoölogists in this state, possibly there are more. In other states there are as many or more. They are employed chiefly in college faculties, also in stations for the benefit chiefly of agriculture, or in public or other museums. They are active men, and their works, unknown to the general mass even of educated men, are published in periodicals or other special forms. The titles of articles and books in the field of morphology proper are published by Professor Carus, of Leipsic, in a serial which is issued every two weeks, and the number of entries in that work is about eight thousand for each year. This list does not include anything in physiology, psychology or medicine.

This being the scope of professional zoölogy, it is clear that it is quite beyond the range of the mission of the ordinary college and should be left to the university grade of education. I do not believe in colleges attempting to train investigators or specialists. It is just as easy for the college to make the mistake of usurping the functions of the university as it is for the high school to make the mistake of usurping the functions of the college. The adequate training of investigators requires a very expensive equipment. There must be a corps of instructors; the departments of modern zoölogy are already too differentiated to make it possible for one man to be expert in very many of them. There must be a considerable body of

university students to create the atmosphere needed for the development of the true research spirit. There must be expensive laboratory building and equipment containing the most modern appliances; very expensive microscopes; elaborate and expensive drawing and photographic apparatus, vivaria and aquaria. A large and ever-growing biological library are at once thought of as among the most ordinary necessaries. In addition, special and expensive apparatus for investigation work must be forthcoming as occasion arises. If a college has a distinct mission, and is anything different from a university, and the smaller colleges by nature of their financial limitations and smaller numbers necessarily must be, then investigation work on the part of its students cannot be its work; its mission ceases for the student at this point. It appears to me to be a serious offense of morals for colleges to offer lame and inadequate post-graduate courses and an apology for research work to students. After the stage of college culture has been passed the student is losing time from his professional career if he does not as soon as possible get into the true university atmosphere, into a group of investigators, and as soon as possible acquire the point of view of the pure zoölogist.

It is hardly necessary to add anything to what I have said with regard to obligation of a college toward the department of zoölogy in case it chooses to offer that subject in its curriculum. It follows, from what has been said, that I should maintain that a laboratory with a certain amount of space for individual work, tools, etc., and library of text-books and some of the zoölogical journals, would be indispensable, and more than that, that the institution must offer a pecuniary inducement that will attract an adequately prepared man to the position and give him sufficient time and assistance to operate a genuine college course or else not give one at all. Our smaller colleges are making a great mistake by dividing up subjects and not at the same time increasing the teaching force. There is no economy in giving a large number of subjects poorly, and a distinct loss of mental discipline and culture. Writers are commenting unfavorably on the modern practice in the colleges of offering a considerable

number of electives. I believe that their strictures are in many instances warranted, but I believe that the cause is to be found not so much in the electives as in the fact that the faculties have not differentiated to match these courses. I do not advocate including zoölogy in a curriculum where the same man has to teach physics and chemistry, and possibly some mathematics, as well as botany, geology, and physiology, and other subjects more closely related to zoölogy.

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TOURS OF RECITATION THROUGH GERMANY

"THE reformers," by which I mean the adherents of the new method of teaching modern languages in Germany, have given a new impetus to their system by engaging every year some ladies or gentlemen of the educational profession to make tours of recitation through the country. We owe this idea to to Mr. Hartmann, of Leipzig, who from the very first has been an earnest advocate of the intuitive method. The great object of this gentleman is to bring teachers and pupils as often and as soon as possible in contact with foreigners. For this purpose he established the international correspondence plan among pupils of Germany, France, England, and America, and after six years of successful operation I am glad to say that it has brought a great number of American girls and boys, ladies and young men, in contact with correspondents of the same age and sex. So numerous were sometimes the demands for correspondents from the other side of the Atlantic that it was often impossible to comply with all the wishes as promptly as might be desired. I hope this laudable zeal will continue for I am sure it will work to the benefit of the two countries which are so closely connected by ties of friendship and by mercantile, industrial, and literary interests.

The establishment of the tours of recitation came about because of the failure of another plan which had been tried by the Department of Education in France. When some five years ago I visited France that I might investigate the progress of teaching modern languages in the secondary schools, especially the teaching of German, M. Rabier, the excellent directeur de l'enseignement secondaire en France showed me a new plan of increasing the knowledge of German among French boys. It was to send his young countrymen to Germany, not singly as was the custom, nor during the long vacations only, but by whole classes and for a year, under the guidance of an experienced

teacher, well acquainted with the language and the customs of Germany. They were to become regular students in a German school, participating in the work and in the privileges just as the ordinary students of the school; a class from a German school, corresponding to the French one in age and knowledge, were to come to France and enter upon the work there in the same manner.

The plan was excellent and would certainly have helped the knowledge of German and French in the two countries. Moreover, it proves what a conciliatory spirit is now prevailing among our French colleagues, even in the highest offices. The plan, however, was too beautiful to be executed. It failed for several reasons: First of all, the German schools with the exception of three or four in which are taught chiefly classical languages, are not boarding schools and hence our government did not know where to procure quarters for the French guests. This difficulty, of course, did not exist in France as all French secondary schools have accommodations for boarders. Then there was a very strong opposition on the part of parents, the Teutonic as well as the Gallic mothers being afraid of the neighbors beyond the Rhine, who scarcely a generation ago had stood in war against each other and who perhaps would murder their pure, innocent boys. A horrible idea! They said, and said emphatically, that they would never consent to such a plan with those dangers.

It was the energy of a single German teacher, Mr. Hartmann, that made up in some degree for that loss. With the same tenacity with which he has always held out against the attacks on the scheme of international correspondence, he tried a new means of getting the pupils into contact with foreigners. He recognized that through a correspondence the style and ability of writing would improve, but he thought that through a recitation by foreigners there would come a decided improvement in pronunciation. The beginning of this movement was made with a Frenchman. It is a fact worth noticing that no reciter by profession, no actor, or anyone of the kind was chosen for this purpose, but a professor of one of the great colleges, M. Jouffret,

who is well known in France for his literary ability as evidenced in his excellent poems, and who among his colleagues is considered as one who has the full mastery over his language. I fully approve of this choice for I remember that when a boy I once heard a reciter in the school I attended who imitated the language and gestures of an actor and by this completely spoiled the lecture. That was not the language which we were wont to hear from our teachers, especially from the one who taught us our native language and who in our opinion spoke the best German that could be heard. Compared to our teacher, the reciter appeared to us like a Jack-a-dandy, and all through his recitation teachers as well as pupils were tittering so that his efforts to make an impression upon us were entirely fruitless. It was the funniest thing that we had ever seen or heard.

The danger of becoming ridiculous is still greater for Frenchmen, who, with their natural liveliness and vivacity of gestures, are very much inclined to act as if they were on the stage. Every gesture, therefore, as well as the intonations, must be carefully studied before a piece is recited to a foreign audience. Our German pupils, and the English, too, abhor all kinds of theatrical declamation. It requires, therefore, careful and serious preparation on the part of the reciter if he will not spoil the effect of his recital. The same preparation is necessary on the part of the pupils if the poems are to be completely understood and are to have the desired effect. A selection of the favorite poems and passages from dramatists was, therefore, made and the pupils who wished to assist at recitation had to prepare these and have difficult passages explained. Then, and only then, they understood the meaning of what was recited, and what is more, could direct their entire attention to the pronunciation, so that they were able to make an intelligent comparison between their teacher's manner of pronunciation and that of the foreign gentleman. If the above mentioned preparation was not made, the sound of the voice passed by the ears of the auditors and meant nothing to them. The students openly confessed this and certainly the reciter could have observed it from their manner. That the pupils might have the opportunity

of ascertaining whether they could understand words in French to which they were were not accustomed, M. Jouffret, before beginning a new recitation, always made a few introductory observations. Prior to the recitation of a scene of a drama he always explained to the audience what had preceded, to what point the action had come, who were the principal persons in the drama, their character, etc. As a result of these remarks, the recitation was not a series of broken pieces of poetry, but an uninterrupted line of glittering pearls, presented to the pupils in the glowing light of the sun. The subject-matter of these recitations may be of some interest. The following is part of the program:

1. Athalie. (The prophecy of Joas, III.)

3. A scene from the "Bourgeois gentilhomme" between M. Jourdain and the master of philosophy.

3. Two fables of La Fontaine—Le Savetier et Le Financier et Les Animaux malades de la peste.

4. Two poems of E. Béranger—Les Hirondelles et Les Souvenirs du peuple.

5. Four of Victor Hugo's—Quand nous habitions tous ensemble, O Souvenirs; Printemps; Aurore; Dolorosae L'Expiation. The prose was represented by a scene from Mademoiselle de la Seiglière (IV, 2), and four pieces from Daudet: Tartarin de Tarascon I (Le Chasseur de Casquette); Les Vieux; L'Agonie de Sémillante; Le Sous-Préfet aux champs Most of the schools insisted upon hearing Athalie and L'Expiation, chiefly to have their pupils hear the declamation of the Alexandrine verse which is so difficult, particularly for strangers, on account of the pronunciation of the "e mute."

The first time was a complete success. M. Jouffret gave forty-nine lectures in about forty towns, pretty well covering the whole of Germany from west to east and from north to south; from Constanz to Grandenz, from Cologne to Kattowitz. But it was not the recitals alone that made this tour profitable to the German teachers; in all larger towns, M. Jouffret read a paper on some interesting aspects of the French language and literature, in which he proved himself a most powerful speaker, a deep

philosopher, and an extremely sensitive poet whose works may be ranked among the best of modern French literature.

The expense of these recitations to the pupil's parents was so slight that it was hardly worth mentioning, They paid three pence each for a lecture that never lasted less than an hour. The audiences were very large. In fact, in some of the smaller towns they were larger than in the great cities. The lecturer felt amply rewarded for his effort and the hearty reception encouraged others to take up this work. The success of this movement is assured and regular tours of recitation have been established. The girls, boys, and teachers really long for the time when the foreign idiom will again be heard with that purity and suavity which strangers—except perhaps Russians—will never be able to acquire. The French reciters were soon followed by English ones, and, if Americans, too, would participate, they would receive a hearty welcome.[1]

Reste un dernier point: qu'elle est l'influence de ces récitations sur les élèves? Je crois pouvoir affirmer qu'elle est très grande. Une réserve cependant: elle ne s'exerce que si les morceaux ont été soigneusement préparés à l'avance, si les élèves, connaissant à fond le contenu du morceau, n'ont plus à s'occuper que de la prononciation. Dans certains cas—très rares, heureusement—où les élèves n'avaient jamais eu le texte entre les mains, celle-ci, évidemment, a passé au-dessus ou à côté d'eux et ils n'en ont tiré aucun profit. Mais, quand le morceau a été étudié de près, sous la direction des excellents *néo-philologues* qui possède l'Allemagne, d'abord les élèves entendent la véritable prononciation et la véritable déclamation. Je ne veux pas dire qu'ils ne puissent l'apprendre de leurs professeurs: mais ceux-ci, qui n'ont tous ni le temps, ni souvent le moyen de venir en France chaque année, perdent fatalement un peu la prononciation si pure qu'ils possédaient, d'autant que, de leurs élèves, ils entendent, surtout en certaines provinces, les fautes les plus épouvantables. Eux-mêmes ne font pas difficulté de l'avouer. Que de fois m'a-t-on répété: "Nous ne parlons pas assez; nous n'avons pas l'occasion de parler!" D'ailleurs il en est de même

[1] All such arrangements may be made through Dr. Hartmann, Leipzig, or the writer of these lines, Dr. Thiergen, Radeberger Strasse No. 8, Dresden. To show how such lecturers are received in this country I am adding the report which M. Henri Bornecque, maître de conférences à la faculte des lettres à l'université de Lille, last year's reciter, published in the *Revue Universitaine* under the title, *Un Voyage de Recitations en Allemagne.*

chez nous. Mais l'utilité ne se borne pas à l'enseignement de la prononciation, si important déjà, puisque l'accent mal placé sur un mot—j'en parle par expérience—empêche d'être compris ou vous fait mal comprendre. Le récitateur est aussi le collaborateur du professeur. Souvent les élèves, lorsque leur maître veut leur imposer telle prononciation difficile pour eux, ont une tendance à croire qu'il accumule par plaisir les difficultés; après la récitation, il n'en est plus de même: le professeur peut évoquer le souvenir du récitateur et les élèves le reconnaissent les premiers; j'ai reçu là-dessus des confidences très précises. Car les auditeurs, petits ou grands, apportent une attention vraiment extraordinaire; ils remarquent jusqu'aux moindres détails et j'en ai vu beaucoup noter sur leur texte la prononciation figurée de tel ou tel son. Enfin, il y a plus. Si les élèves arrivent à comprendre les explications données—et, pour cela, il suffit de ne pas employer des expressions trop recherchées, de parler lentement et distinctement—ils sont "enflammés d'un nouveau zèle" pour l'étude de la langue française: c'est l'expression même dont se servait un élève de Leipzig, il y a un mois, dans un devoir où il avait à raconter la récitation qu'il avait entendue. Ces voyages entraînent donc des résultats assez considérables au point de vue pédagogique; les conséquences en sont encore d'un autre ordre, et d'une portée bien plus haute à la fois et bien plus lointaine. Dans une des villes que j'ai visitées, le professeur qui m'introduisait a fait précéder ma récitation de quelques paroles, où il disait, entre autres choses, que mon voyage était un signe des temps, et qu'il eût été impossible il y a vingt ans. C'est que, en effet, dans nombre de villes, grandes ou petites, que ne visitent jamais les Français—dans telle place forte, on n'en avait pas vu depuis la guerre—le récitateur est considéré comme le représentant—très humble, je le dis tout de suite—de la nation française. On nous juge mal à l'étranger; certains romans nous ont fait beaucoup de tort et l'on a tendance à nous représenter comme plus ou moins semblables au Rivault de la Marlinière de Lessing. C'est à ceux d'entre nous qui vont en Allemagne de donner de notre race une idée plus adéquate à la réalité; sans compter enfin, comme l'écrivait ici même M. Jouffret, que "le meilleur moyen de susciter dans les cœurs plus d'harmonie et de solidarité, c'est de faire pénétrer dans les esprits plus de lumière et de mutuelle intelligence."

Pour toutes ces raisons, je souhaiterais voir de telles récitations introduites chez nous. Nos élèves sont capables d'en tirer profit; je sais tel pédagogue, le plus éminent d'Allemagne, dont j'ai le nom au bout de la plume, qui est prêt à entreprendre ce voyage et y réussirait à merveille; tout dépend de nos professeurs. Je regrette de n'être pas assez autorisé pour prendre la direction et me charger de l'organisation d'une semblable tournée; mais, si des correspondances particulières me laissaient croire qu'on ait chance de réussir—et je répondrai volontiers à toutes les questions—on trouverait, j'en suis convaincu, un homme prêt à se mettre à la tête d'une entreprise si féconde en résultats de tout genre. Je souhaite seulement que le récitateur—

puisse-t-il être appelé dans un avenir rapproché!—trouve, chez nous, dans tous les milieux, un accueil aussi cordialement sympathique que la réception dont m'ont honoré partout les professeurs et les directeurs allemands! Ils me permettront d'offrir ici mes remerciments les plus sincères à eux d'abord, ensuite à l'homme dont le patronage vaut auprès des néo-philologues la plus flatteuse introduction, à l'organisateur de ce voyage, M. le professeur Hartmann.

OSCAR THIERGEN

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CHARLES HOOLE'S SCHOLASTIC DISCIPLINE

For my part I have often wished that all parents were able to teach their own children; for then they would either ease schoolmasters by setting their work more forward, as sometimes they do their servants, or more liberally reward their pains that diligently and faithfully perform their trust, in a thing of such concernment, and wherein themselves have no judgment.—CHARLES HOOLE, in his *Translation of Cato's Distichs.*

I HAVE already spoken of Hoole's desire to introduce the reading of English into the petty school—of his belief in realistic teaching, with the text-book, *e. g.*, Comenius' *Orbis Pictus*—of his requirement of accommodation by the teacher to the capacity of children, and his incitement to the increase of petty free schools.

His first chapter in the section, "Scholastic Discipline," in his *New Discovery of the Old Art of Teaching School*, is on the founding of a grammar school. He divides grammar schools into two kinds, the first of which he calls *mixed* schools. By this term he means not that both boys and girls are received, but that the master is required to teach children freely and that he has in his charge both those who are there only to learn reading and writing and those who in addition are to be grounded (he adds: "they know not what it meaneth") in common grammar. Hoole already in the *Petty School* has stated his view that it is much better to leave the grounding in grammar to the second kind of school which he terms the purely grammatical school, which for the most part trains youth for the university. The collegiate schools had great revenues—and no doubt for the more advanced scholars they were of the highest value. Hoole states, however, that they were not of advantage to boys for learning the "mere rudiments" and that for this reason, many parents sent their little ones to "tabling schools."[1]

Of such private schools, Hoole says:

I have observed children to make double profiting in respect of other schools, because they have the advantage to spend much of that time at their

[1] *I. e.*, boarding schools.

books, which others trifle away in running up and down about home; not to say that the constant eye of the master is an especial means to regulate them in point of behaviour.

Hoole's enthusiasm in education manifests itself in two directions, viz., in what may be called the democratization of education as well as in the promotion of Comenius' beloved object — encyclopædism. He combines the two directions in the following passage:

I conceive a course may be taken, especially in cities and towns of greater concourse, to teach a great multitude of scholars (as Corderius professeth to have taught 500 and I have been informed that in some places beyond seas, 2500 are taught in one school) without any noise, in a pleasing and profiting manner, and in their playing years; not only the English, Latin, and Greek tongues (together with the duties of piety and civil behaviour) but also the eastern and other needful foreign languages, besides fair writing, arithmetic, music, and other prèparatory arts and sciences, which are most obvious to the senses; and whereof their younger years are very capable; that thereby they may be thoroughly fitted for ingenuous trades, or to prosecute higher studies in the universities, and so be able (when they come to man's estate) to undertake the due management of private or public affairs, either at home or in other countries.[1]

Hoole's model for a grammar school is to be placed not far from the fields, but near to the church of a city or town in which the people are well affected to piety, learning, and virtue. It must have plenty of ground. There should be room for 500 children. Class rooms should be separated by folding doors which can be removed to make up a large hall. The usher's "pews" should be set in a commanding position. Shelves and boxes for the pupils' books are to run along the walls. In each form there should be a repository to receive the subsidiary[2] books. The school-building is to be of three stories, and to each of the stories he assigns rooms for the different purposes of the school. The most remarkable of his suggestions is as to the uppermost story: In it "there should be a fair, pleasant

[1] Compare MILTON, "I call therefore a complete and generous education that which fits a man to perform justly, skilfully, and magnanimously all the offices both private and public, of peace and war."

[2] Hoole insists on a large number of reference books for use in each form. Some of these, the classical books, he looks on as necessary; others — subsidiary — he considers desirable.

gallery wherein to hang maps, and set globes, and to lay up such rarities as can be gotten in presses or drawers, that the scholars may know them. There should likewise be a place provided for a school library. . . . There should be two or three rooms made a little remote from the (master's) dwelling-house to which scholars may be removed and kept apart in case they be sick."

The head master should not be required to do double work — to teach and to direct. His chief care should be ("and it will be business enough for one") to prescribe tasks, to examine the scholars in every form, how they profit, to see that all exercises be duly performed and good order constantly observed, that every usher be dexterous and diligent in his charge and moderate in executing such correction as is necessary at any time to be inflicted for vicious enormities, but seldom or never, for errors committed at their books. As to salary, the head master should have at least £100[1], and the ushers in order, £30, £40, £50, £60 £70, and £80 per annum.

Hoole takes the opportunity to approve John Dury's *Reformed School*, with the association of students there recommended. Hoole adds a passage which seems to foreshadow the training of teachers. "I leave it to the consideration of those that endeavor to promote school-teaching, whether such a school as I have now delineated, would not be of great concernment to the church and commonwealth, whereout to pick more able schoolmasters, that by degrees have been exercised in teaching all sorts of scholars for (at least) seven years together, than many men that have scarce saluted, or are newly come from the universities, can suddenly prove to be." Then comes one of Hoole's most significant sentences. "For I think it one thing to be a good schoolmaster, and another thing to be a good scholar, though the former cannot well do his duty as he ought, except he be also the latter."

The next point taken up by Hoole is that of discipline. The main requisites he finds to be (1) that a master behave as a master over himself. If he feel anger coming over him "let him

[1] With the right of "tabling strangers;" together with fees, at least 10 s. per quarter from parents able to pay, but poorer children must be taken freely.

rather walk aside awhile out of the school to divert it than express it openly amongst his scholars by unseemly words and gestures." (2) Wherever possible explain the ground of reason on which any order or command is founded. (3) Let the master always show himself pleasing and cheerful. As much as possible reprimand in private. Be firm. Be impartial. (4) Praise is more effective than blame. (5) If parents interfere in school hours, admonish *them*, in the presence of the scholars, "to cease their clamour, and to consider how rash they are to interrupt his business and to blame him for doing that duty to which he is entrusted by themselves and by others, their betters."

As in the *petty school*, so now in the *grammar school*, Hoole states the school times. Six o'clock was the hour at which children were, in many schools, "fast at their books." Hoole advises a relaxation to 7 o'clock in both winter and summer. The common time of dismissing scholars from school was 11 o'clock in the forenoon, every day, and in the afternoons on Mondays, Wednesdays and Fridays, 5 o'clock; but on Tuesday, 4 o'clock, and Thursday 3 o'clock. It was after these hours that provision had to be made for such children as desired to go to the writing school.

Hoole refers to Brinsley's suggestion of "an interval" at 9 o'clock and 3 o'clock,[1] which was in use at Westminster school. He considers it is not so requisite if scholars only come at 7 o'clock in the morning. Moreover, where there is variety of work, together with use of the subsidiary books, in each form there is no need of scholars "over-toiling."

As to the granting of play-days, the master should be willing to gratify deserving friends who beg for holidays for the boys. If they are unreasonably importunate they must be served as "unreasonable a nay-say." It is a good plan also to grant play-days only on condition of good work being first dispatched.

[1] Brinsley speaks in the following guarded terms:

Spondeus: But these intermissions at nine and three may be offensive; they who know not the manner of them may reproach the school, thinking that they do nothing but play.

Philoponus replies: That they must avoid offence, but that when it is done as a custom and in decent order it will be no more offensive than it is at Westminister.

Or, again, let one of the upper form make a petitionary oration[1] to the master and a gratulatory speech, after leave is obtained.

The directions for granting play-days are: (1) Not more than one in each week and that only when there is no holiday in that week; (2) no play-day to begin till 1 o'clock, at soonest; (3) all scholars to be dismissed into some close near the school.

After dealing with play-days, Hoole passes on to the admission of scholars, division into forms, of the orderly sitting of scholars and demeanor in their seats—points interesting historically as to questions of usage, but as to which Hoole has little to say in way of advance. It is, however, worth noting that in placing of boys in forms, he would trust the election of boys to positions to the voting of the class, thinking that the general judgment of boys as to ability is the best guide in allotting places. He allows, however, a veto to the master. He approves of competitions between chosen sides, in the preparation of lessons. He enjoins that the master should be sure to always keep boys employed by proportioning every task to their time and strength.

His remarks as to written exercises are quaint and interesting:

> Let them peruse one another's exercise amongst themselves and try what faults they can find in it; and as you read them over, where you see a great mistake explode it; where you espy any oversight, note it with a dash, that they may amend it; but where you see any fault, which is beyond their power to avoid or remedy, do you mildly correct it for them, and advise them to observe it for the future. However, forget not to commend him most that hath done the best, and for his encouragement to make him read over his exercise aloud, that others may hear it and then to hang it up in an eminent place, that they may imitate it; and if any one can out-do it, let his exercise be hanged up in its stead. But if anyone hath lazily performed his exercise, so that it be worse than all the rest, let it be cut in fashion of a leg, and be hanged up by the heel, till he make a better, and deserve that may be taken down.

[1] Such a petition was presented by 273 boys of Merchant Taylors School to the company, March 21, 1644. There is a copy of the curious and interesting English portion of the petition in the British Museum (669, f. 10 (23).) There were also at the same time exercises in Latin and Greek presented. The petition is reprinted as a note at the end of this article.

Further points dealt with by Hoole, are weekly repetitions, grammatical examinations (in which the forms are divided into two sides, which examine each other), and disputations, the collecting of phrases from authors and gathering of them into commonplace books, the making of orations and declamations, religious education,[1] the monitor's bills, and rewards and punishments in a grammar school, of the learning of writing.[2]

On no subject does Hoole write with more delight than on schoolbooks.

> As for books a care should be first had to procure those of a fair print in good paper, and strongly bound; then the master may more easily see that his scholars keep them all safe and cleanly and free from scribbling or rending by causing them at a time unexpected to bring all their books before him, and to show their names, together with a note of the price, fairly writ in the middle of every one of them as well as at the begin ing or end.

Each scholar is to deliver to the master once a quarter a catalogue of all his books, so that they can be checked—and the boy suspected of carelessness can at any time be called upon "to a private and particular account of them." The head-boy of each form is to be responsible for the subsidiary books of that form, both for giving out and receiving into the repository. "It would not be amiss" that each scholar admitted into the school should give 12 pence, and 12 pence on leaving toward the purchase of common books. Visitors should also be expected to contribute, and where schools have an endowment, funds should be especially devoted to the purchase of books.

Where money can be got, Hoole would wish to see a little library well furnished with "all sorts of grammars, phrase-books, lexicons, dictionaries, orators, poets, histories, herbals, commentaries, scholiasts, antiquaries, critics, and some of the succinctest and choicest authors for matters of humanity, divinity, medicine and law; besides those which treat of every art and science, whether liberal or mechanical, that he that is employed as a professed schoolmaster may thoroughly stock himself with

[1] See *Educational Review*, London, Feb. 1899, "Religious Education in the English Schools During the Commonwealth."

[2] See *Gentleman's Magazine*, Sept. 1899, "On the Teaching of Arithmetic and Writing in the Time of the Commonwealth."

all kinds of learning and be able to inform his scholars in anything that shall be necessary for them to know. For every new master cannot at the first be provided of a good study of books for his own private use and his scholars' benefit, neither, indeed, at any time can he procure them without great trouble and charge, especially if he live at a place far distant from London." Hoole refers in terms of praise to Mr. Colfe, who in founding his grammar school at Lewisham had provided a library for the use of masters, and to gentlemen who had given £100 to furnish a library for a school in Shropshire. He also gladly notices that "one" had bestowed 40 shillings a year towards buying English Bibles to give to those children in the parish who should be best able to read their Bibles. Hoole ends the subject: "I do verily believe that, were an annual small sum laid out in procuring a certain number of books for such as should best deserve them in every form at a free school, it would be a greater incitement to provoke children to learn than any persuasions or enforcements which are commonly yet used."

There is a chapter dealing with "exclusion" and "potation," which is of antiquarian interest. These customs were "on foot" in most places. By "exclusion" was meant that the scholars excluded or shut out their master once a year from the school, and "capitulated" with him as to orders to be observed. Hoole does not forbid the observance of the custom, but states the conditions under which the custom may be carried on until it dies of itself. These conditions are: (1) The master must know of the intention beforehand, so that all may be "ordered handsomely" to the credit of the school. (2) That at the time of exclusion the scholars behave themselves "merrily and civilly" inside. (3) That the heads of each form consult with their fellows what things they would desire of the master, and that they bring their suits to the highest scholar in the school, that he may prefer them to the master writ fairly in Latin, to receive his approbation or dislike of them in a mild way of arguing. (4) That the master does not molest or come among his scholars all the while they are drawing up their petition . . . . nor trouble himself concerning them, more than to hear that they

keep good rule. (5) That every scholar prepare all his exercises according to his form, to be ready to be hanged out before the school doors or windows, or rather to be hanged over his place within the school against the master's coming. (6) The master should enter the school in a "peaceable and loving manner," receive from his scholars the petition, and make a short congratulatory oration, and dismiss them to play.

The custom of potation or general feast in schools was that before Shrovetide every scholar should bring from his parents money to the master to be spent on a dinner. Hoole insists that order should be kept, and moderation, especially in drinking, at such times, that the function may be a refreshment and encouragement rather than any occasion of distemper or "debauched behaviour." Hoole speaks of "breaking-up schools" about a week before Christmas, Easter, and Whitsuntide till the week following those holy days begin. It was usual then for every scholar to bring "something" to the master as a token of his own and his parents' gratitude. This ought to be requited by the master providing a collation to which parents and scholars are invited, and at which the higher forms ought to entertain the company with some elegant Latin comedy from Terence or Plautus, and part of a Greek one from Aristophanes, with orations and declamations. The lesser boys are to be asked questions and be examined orally by anyone who likes. These are means worth taking, Hoole observes, to "preserve the credit of the school against all virulous aspersions that are apt causelessly and too often to be cast upon it by unworthy and illiterate persons."

Hoole[1] gives the time-table of lessons in the Rotherham school, as drawn up by one of his predecessors, Mr. Bonner. It is of high value as giving the proportioning of time to subjects and the actual school text-books in use.

In stating his own methods, as Bonner's successor, it is very interesting to find that Hoole's principle was "to seek not so much to alter anything as to supply what I saw defective in it." He saw that whilst every master likes his own method best, yet

[1] In chap. x.

it is the duty of every one to seek for a better even than his own best. Though "one constant" method may be employed, yet experiments may be made of others "without distraction of the master, or hindrance to scholars." If a new course of teaching be adopted, it must not be brought in suddenly on scholars[1] who have been trained even in a worse system. Amongst these are to be named Mr. Brinsley, Mr. Farnaby, Mr. John Clarke, and particularly Mr. John Comenius.

But even with such excellent men as masters of method, Hoole ventures to think that it was not enough to follow them. He learned from all he could, theoretical and practical teachers, and then "observing the several tempers and capacities" of those he taught, he endeavored to find out and contrive all the helps he could. He feels it his duty, as having thought and worked at the elaboration of good methods to publish the results, and wishes that others would do the same.

It is an old-world ending to his tractate, but it is couched in a teacher's spirit:

> The hopes that I conceived hereby to provoke my betters, hath especially encouraged me (at last) to yield to my friend's importunity, in setting down this method of teaching, and writing down also this form of school-government, which I heartily commend to God's heavenly blessing and the candid censure[2] of the more judicious, hoping that as I intend chiefly the general good, so none will requite me with malicious obtrectation, which if any shall do, I charitably pray for them beforehand that God would for Christ's sake forgive them, and grant that I may not heed what they write or say concerning me or my labours, so as to be discouraged in my honest endeavours for the public service.

FOSTER WATSON

NOTE.

The Scholars Petition for Play-dayes, instead of Holy-dayes: Exhibited To the right Worshipfull, the Master Wardens and Assistants of the right Worshipfull Company of Merchant Tailors, by the Scholars of their School, in the Parish of Laurence Pountney London, Martii 21 an 1644 being the day of their publick Examination.

[1] It was for this reason Hoole tolerated Lily's Latin Grammar, not because it was ideal, but as it was authorized and widely used it was at least a common standard, and boys moving from one school to another would not be confused if it was everywhere used.

[2] Opinion, judgment.

After divers other Exercises in Latine, Greek, and lastly in English, the Petitioner, in behalf of himself and his fellows, thus addressed himself to the Company:

—yet one word more we crave, to show what grieves us,
Wherein we pray your Goodness to relieve us.

Since mis-call'd Holy-dayes, profanely spent,
Are justly now cashier'd by Parliament;
For that the scarlet garment which they wore,
Was but a rubrickt-badge o' th' Romane Whore;
Which therefore now must mourn in sable black,
Changing her colour i' th' next Almanack;
Guilty before of scandalous abuses:
Which notwithstanding yet the harmless Muses
Us'd only for their sportful intermission
Of toilsome Studies; not for Superstition.
"For he that made all things, did not make Man
"Of stone, or steel, or brass Corinthian;
"But lodg'd our souls in a frail earthern mass,
"Thinner than water, brittler than the glass.
"He knows our lives are by naught sooner spent,
"Than having still our souls and bodies bent.
"A Field, left fallow some few years, will yield
"The richer crop, when it again is till'd.
"A River, stopped by a sluice a space,
"Runs after rougher; and a swifter pace.
"A Bow, a while unbent, will after cast
"His shafts the farther, and them fix more fast.
"A soldier, that a season still hath lain,
"Comes with more fury to the field again.
"Even so our body, while to gather breath,
"From pains sometimes at rest it sojourneth;
"It recollects its powers, and with more cheer
"Falls fresh again unto its first career."

To you therefore we make our Common Prayer,
That, weighing the promises, you would repair
This doleful damage; and in compensation
Of this sad loss, appoint, for recreation,
Some equipollent seasons, as will fit
Seem to your Wisdoms best for to permit.

Thus your poor Orators devoutly pray,
[1]That you sequester would sometimes for Play.
O let not then our Masters be our Jailers!
So shall we ever pray for Merchant-Tailors.

This our Petition is, which you shall see
Subscrib'd with hands two hundred seventy three.

[1]Graio Schola nomine dicta est,
Justa laboriferis tribuantur ut otia Musis.— *Auson.*

ELECTIVES IN THE SMALL HIGH SCHOOL

FREEDOM for the individual seems to be the central thought in the arguments advanced in favor of electives in the high school. It is well to remember that the granting of absolute freedom to all produces a condition of limited freedom for each. The very fact that others have been granted freedom will limit the activity of each to those things which do not interfere with the rights and privileges of any other. In this, a free country, we may each do as we please, except when that action is dangerous to others or hostile to the general good. A man may not harm his neighbor without feeling the majesty of the law. Neither can he destroy his own property nor take his own life without an effort being made to prevent it. It is deemed harmful to the public good to allow a man to commit suicide, and in educational matters the same principle holds good.

There are two interests to consider, those of the individual and those of the community or state. In this, a republic, the proper education of the people is essential to the best development of the national life. Every man who falls short of the best possible education lowers by so much the national vitality. I do not mean by this that if all men were Ph.D.'s we would have a better republic. Far from it. But I do mean that every boy should have that amount of education which will best fit him for his station in life; and that he shall have enough to enable him to choose that station intelligently, with as full a knowledge as possible of his own abilities, his own likes and dislikes, his chances of failure or success in the chosen line.

The good of the community demands that no one be allowed to commit intellectual suicide. Your rights and mine collectively are superior to the rights of any particular individual. This principle may be applied both for and against the elective system. If the forcing of a boy through, or rather over, a prescribed course, stunts his intellectual growth, ruins his mental capacity, kills his interest in school, and drives him out less

fitted for his work than he might otherwise have been, then by all means let us avoid the prescribed course. If, on the other hand, a system (or rather lack of system) of free electives permits such a selection of work that the boy leaves school without acquiring habits of accuracy; if dormant powers have not been awakened; if he has not learned the lesson of patient persistent work (call it drudgery if you will); if he leaves thinking that all work is a mere following of a desire, then the school has failed to do what it might have done for this boy, and both the boy and the community suffer.

Fortunately neither of these two results very often follow. The prescribed course in most cases neither stunts the boy's intellectual growth nor kills his interest in school. Likewise it has been demonstrated that under an absolutely free elective system most of the pupils select a well-balanced course of study. The real question at issue, then, is limited to those few who cannot do the prescribed course, and to those few who will not select a systematic course under a system of free electives.

The remedy for the first does not lie in the removing of all restrictions. If the collar galls the horse's shoulder we do not throw away the entire harness. So in a program of studies, I believe that much should be preserved and insisted upon, and that the adjustments necessary will be found few in number.

The second class, those who under a free elective system make the wrong selections, would, in my opinion, suffer no harm if compelled to *try* some things. I have taught pupils who seemed beyond hope in geometry, and yet I believe that the very effort made by these pupils to master a bit of logical thought was of inestimable value to them, even though they never obtained a passing mark. If these pupils were good in their other studies they derived no great harm from this so-called waste of their time, and if they were not good in anything they ought not to lay claim to the honors of graduation. In practice I have graduated pupils who had not passed geometry, but never one who had not tried to pass it.

The whole question hinges on what subjects are essential and who is the best judge. Recently a prominent advocate of free

electives, a man who has spent many years in high-school work, said to me that he was not competent to select the subjects which were essential, that he was biased. If such a man, who knows the contents of the different subjects, and who knows, or ought to know, the educational value of each — if he cannot tell which subjects are well adapted to general educational needs, how much less is the fifteen-year-old boy or girl able to select wisely? The man or woman who has spent ten years with high school boys and girls, and who cannot in nine cases out of ten make a better selection of subjects for a boy than the boy or his mother can, lacks all of the essential elements of a good high-school principal. The man who can do this can also with equal facility tell when the boy has been sent the wrong way, and will make all wise and needful concessions. We hear a great deal about the elective system's allowing the administration to get an arm around the boy. This is good, but what the boy wants is a strong, vigorous, guiding arm which is at the same time sympathetic and encouraging, not one which assists him to his own ruin.

If there is a conflict, real or apparent, between the interests of the individual and that of the community, the community interests must rule, and in general this is best served by a program of studies containing at least some semblance of a systematic and orderly arrangement of subjects deemed most essential.

Let us consider what are the essential subjects. In a recent article in the *Popular Science Monthly*, Professor Hanus says:

> The question about elective studies is, accordingly, not "shall we recognize electives?" That question has been answered in the affirmative. The question is, "What is the wisest administration of electives in secondary education?" While each school is seeking the answer to this question in its own way there is a substantial agreement on one point, namely, that there should be restriction on the pupil's freedom to choose his own curriculum of studies.

In defining this restriction Professor Hanus further says:

> Under existing conditions . . . . it seems to me wise to prescribe for every high-school pupil at least one year of the language and literature of his mother tongue; one year of American or English history (chiefly political); one year of American or English economical history and civics, or,

when possible one year of elementary political economy; one year of a modern foreign language; one year of science (physical geography or botany and zoölogy); one year of algebra and geometry together; one year of drawing and manual training; each of these subjects with a time allotment of from three to four periods per week.

Whether this amount of prescribed work is a "safe basis for the administration of the elective system in our secondary schools" depends on the conditions existing in such schools. It is my belief that the *conditions actually existing* in the smaller high schools, by which I mean those with less than four teachers, differ so materially from the conditions in the larger high schools, which Professor Hanus evidently had in mind, that a considerable modification of his prescribed list should be made.

Many of the schools have during the last decade put into operation programs requiring less than five recitations per week in a subject. The desire to reduce the number of recitations per pupil below twenty per week, and the belief that fifteen was too small a number, was one of the reasons for the movement. Another lay in the belief that better results would be obtained by spreading a given number of recitations over longer time. In the larger high schools working under high pressure the first of these reasons *may* have much weight, but in most of the smaller schools the average pupils are not overburdened by twenty recitations per week. A diminution of the number would in most cases result in direct loss, because no corresponding increase in the intensity of work would be made. As to the second reason, experience has shown that in most cases the pupils suffer a loss in interest and do less effective work when recitations are separated by intervening days. It is the almost unanimous reply of teachers who have tried it, and I have asked many, that pupils reciting but three times a week do less than three fifths as much as would be done in five recitations per week. As a result of this experience very few of the smaller high schools in Illinois now offer fractional courses. As applied to small schools, therefore, the time allotment should be not less than five recitations per week in each subject.

A second existing condition which will modify the prescribed

list is the positive refusal of many school boards to approve of a curriculum making a foreign language a requisite of gradution. I attach such value to the study of foreign language that I would welcome a requirement of at least two years work in some one of them, but in a large share of the smaller schools any language ***requirement*** is out of the question.

Still a third modifying condition lies in the quality of the work done in English. Even under the best conditions a year of English work is insufficient. English is such a practical asset and is so essential to the best development and the future welfare of the pupil that it cannot be slighted. There is so much of English that is essential that no non-essential English should be taught. Every pupil, therefore, should not only be allowed to take all of the English taught, but should be compelled to take it. There are differences of ability but for most pupils an irreducible minimum is three years of five full recitations per week. Except under most favorable conditions a fourth year may profitably be added. It is also understood that the English is not to be a "snap," but that the teacher is to demand full time of preparation, and place the work on a level with that in other lines.

Again, if algebra and geometry are to be taught together, one year is insufficient, and if but one is taught many teachers would not willingly omit the other from the required list. So long as schools insist on teaching ancient and mediæval arithmetic in the seventh and eighth grades when algebra and elementary geometry might more profitably be taught, two years of high-school work in mathematics will be a requirement not inconsistent with the welfare of the pupil.

Making these modifications, and some minor ones, the required list might be made up as follows: English four years, algebra and plane geometry two years, English and United States history one year, physics one year. This covers one half the entire work. It can be conveniently arranged so as to provide two subjects for each year of the course. If the pupil is to recite in four subjects daily, at least three additional subjects must be offered in each year in order to provide any chance

for election. This would add twelve subjects to the curriculum and bring the total number of daily recitations up to twenty. There is a substantial agreement among educators that forty minutes is the minimum recitation period consistent with effective high-school work. On this basis it is possible to provide eight periods per day, though it is usual to provide but seven. In order to hear twenty recitations daily in a school of three teachers each assistant would need to teach seven classes, while the superintendent taught six. This is a number too large for the best work, and even this makes no provision for double laboratory periods. A slight reduction in the number of recitations may be brought about by alternation of third and fourth year subjects.

It may be of advantage to have such a course in full before us. The selection of the electives would be guided by local conditions, the bias of the teacher, and the traditions of the school. They might not be those given below. These were selected because they conform closely to present practice in Illinois.

Required	Elective
FIRST YEAR	
English I.	Latin I.
Algebra.	Physical Geog. ½; Physiology ½.
	Bookkeeping.
SECOND YEAR	
English II.	Latin II.
Plane Geometry.	Zoölogy ½; Botany ½.
	Greek and Roman History.
THIRD YEAR	
English III.	Latin III.
Physics.	Mediæval and Modern History (German I).
	Solid Geometry and Algebra.
FOURTH YEAR	
English IV.	Latin IV.
English and United States History.	Political Economy and Civics.
	Chemistry (German II).

If but three years of English are required, an additional year of history or economics may be added to the required list.

Drawing or manual training, however desirable, cannot be required in this class of schools. In fact, on account of lack of suitably prepared teachers, they cannot be advantageously taught in most of them. It will be observed that the substitution of German for history in the third year and for chemistry in the fourth year provides a course which requires at least two years of foreign language for graduation. In the elective list the subjects may vary widely or their relative positions may be changed. This in turn might necessitate a rearrangement of the required subjects. The essential points, however, are that at least the amount given should be required and that a three-teacher high school cannot offer more than twelve additional subjects. Where local conditions permit the requiring of two years of foreign language, it will be of advantage to reduce the total number of subjects to eighteen, thus making all subjects required during two years of the course. Pupils preparing for college will need to select foreign language and the third year of mathematics. The exigencies of daily program-making will make it advisable to restrict the choosing of electives to those offered in the year of the course which the pupil has reached, except that pupils who have omitted Latin may be allowed to begin it in the third year.

On the basis of forty-minute recitations the maximum number which can be taught in a two-teacher school is sixteen. It is evident that no elective studies can be offered if the curriculum provides for four studies daily for four years. By alternation of third and fourth year subjects the number of daily recitations may be reduced to fourteen. Many such schools desire to offer Latin, but are compelled by local sentiment to allow the pupil to take something in its stead. Such schools frequently present a curriculum requiring twenty daily recitations, an amount of work evidently too great. In this case perhaps the best that can be done is to offer a four-year course of three studies daily. The optional studies instead of Latin would bring the total number of subjects offered up to sixteen, while the daily recitations might be reduced to fourteen by alternation. In such a school the bright pupils could take four studies daily, while the others took but three.

The consideration of existing conditions, as I see them, leads me to the conclusion that whatever our desires and beliefs in regard to electives may be, the pupil in a two-teacher school cannot avail himself of much choice other than that of omission. In a three-teacher school a limited elective system similar to the one outlined may be put into operation without subordinating the general good to that of the individual, and represents all that is possible or even desirable.

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EDITORIAL NOTES

GEORGE HERBERT LOCKE

MR. ASQUITH in his inaugural address to the students who came to Oxford University during the summer to take part in the extension privileges gave a very interesting definition of the aim of academic teaching — "to awaken intellectual interest, to bring the student to conceive of knowledge, not as a means but as an end; to arouse in him the ardor of exploration; to fit him to find his own way and walk on his own legs without leading strings or crutches as he pushes on unto strange climates and new territorities."

THE hold that the study of education has taken of England may perhaps be best seen by the recent meeting of the British Association when for the first time in the history of that great gathering education was given a distinct place, and will henceforth be known as a "Section." The scope of the discussion may be best indicated by the subjects discussed, among which were: "The Future Work of the Section." "The Experimental Method of Teaching," "The Scope of Educational Science," "The Practical Study of Educational Science," "The Influence of the Universities upon the Curricula of Schools," "The Teaching of Mathematics," "Commercial Education," and "The Teaching of Botany." It is interesting to note that in Professor Perry's address on mathematics he appealed for rational rather than traditional teaching. He advocated concrete arithmetic, inventional geometry, and the application of selective inspiration to the teaching of higher mathematics, many parts of which, he held, may be taught with great advantage at an early age. He recommended "short cuts" wherever these could be taken scientifically, as being really useful as well as interesting to the pupil, who, unless a mathematical genius, is apt to be utterly bored and discouraged by plodding along the beaten track of Euclidean geometry and traditional algebra. The use of Euclid as a text-book was universally condemned by the mathematical section, and the use of concrete methods and abbreviated workings in arithmetic and algebra as widely recommended.

DR. W. R. SCOTT, lecturer on political economy at St. Andrew's University has published a very interesting outline of a commercial course at the universities. He contends that the universities, without competing with the technical schools, can give a scientific course of education which shall not be too abstract for the wants of business men. He defines higher commercial education as "the training of those who are intended to fill responsible positions in business." A person who is to take part in the management of an

undertaking requires a wide knowledge, best gained at a university, of many applied sciences, most of which are already taught, and all of which are within the limits of a university curriculum. Further he needs a training which shall be accurate as well as wide; for nowhere is a little knowledge more dangerous than in commerce. To this end he proposes the institution of a degree corresponding to the B.Sc., with two examinations. The first examination should be on three of the following subjects: agriculture, chemistry, history, jurisprudence, political economy, political science. The final examination should be on a higher standard in similar subjects more specialized for business purposes, with the addition of commercial and international law, geology, engineering, public finance, and local government, banking, etc., three subjects again to be chosen. Dr. Scott suggests that a modern language should be required in the preliminary, and he points out that the student might with advantage, spend five months in the year at the university studying the theoretical side, and during the remainder of his time he could make progress in becoming familiar with practical details. This seems to be a very suggestive course and the outcome of it will be looked for with interest.

In the course of an excellent article on "Psychology and Education" in the *London Journal of Education* Mr. T. Raymont says:

> I proceed to the next of the mistakes which, as it seems to me, are being made in some current applications of psychology to education. It consists in the assumption that all parts of the science are equally, or almost equally, relevant to educational problems. As a matter of fact, a very great deal of the contents of our standard treatises on psychology, though it may be precious in the sight of the philosopher, is only so much useless lumber for the student of education. From this point of view I would have young teachers regard with suspicion the sort of text-book which is in effect a more or less elementary treatise on psychology interpersed with a systematic series of pedagogic asides. Such amode of treatment lends itself with fatal facility to the premature and useless "application" of uncertain or (for the purpose) unimportant psychological data. Here, for instance, we have a fruitless attempt to make pedagogic capital out of the unsettled doctrine of heredity. In another place the student is led through many of the intricacies of the physiology of the sense organs and the psychology of sensation, only to be told at the close that he should attend carefully to cases of note-neatness or color-blindness. Yet, again, the value of certain psychical measurements, estimated in thousandths of a second, is darkly hinted at, and we are encouraged to look forward to a time when "brass instrument child-study" shall be of surpassing importance to teachers. Some of these questions may be of no small speculative interest to the specialist or the older teacher; but to offer thin discussions of them to a beginner is to give him stones instead of bread.

BOOK REVIEWS

A History of Rome for High Schools and Academies. By GEORGE WILLIS BOTSFORD, PH.D., Instructor in the History of Greece and Rome in Harvard University. New York: The Macmillan Company, 1901.

RUN in a similar mold to the author's *History of Greece*, this Roman history will surely find a wide use in our preparatory schools. True to the demand of the day, it does not end abruptly with the death of Caesar (How and Leigh), with the Battle of Actium (Shuckburgh), or with any artificial boundary, but carries Roman civilization through the long period of decline over the three centuries of lapse in the West to the revived empire of Charles the Great. To have accomplished this successfully within the limits of 350 pages, means, of course, much condensation and many omissions, with constant attention to proportion and the general impression. On the general plan, as on his success in carrying it out, Dr. Botsford certainly deserves congratulation. He has given us a stimulating book which brings home to the student with great force the Roman background of our modern life. Vividness is often gained by citations from Livy, Plutarch, etc., or the *Res Gestae* of Augustus. In the translation of these a Froudian freedom occasionally shows itself as (p. 92 fin.) where Val. Max. IV, iv, 11 (sic), is singularly contorted. Suetonius' account of the end of Nero is not in agreement with the text (p. 231) which claims to rest upon it. Sallust (p. 180 fin.) is freely handled, and *incredibilia* rendered *romantic* — a most un-Roman word! Open to criticism in the same spirit are the quotations on pp. 18, 72, 105, 106, 144 fin., etc., and a statement from (?) Appian, p. 177 top. Carelessness in English occurs but rarely, as p. 199 top, *lay* for *laid;* p. 154 top, *rostrum:* p. 29, *fine public buildings;* while p. 340 med., *board* seems out of keeping with the luxury there described.

Misprints are few in number: P. 75, *taibuta* for *tributa;* p. 92 fin., *dele* 6 in the reference to Val. Max. (cited above); 288 med., *è* for *à;* 352 top, insert *Boissier;* p. 61, l. 6, for *Campania* read *Lucania.* The modern word *Sabina* (p. 4) is confusing to the student. Of inaccuracies, it seems to the reviewer that an unfortunate number have escaped the proof readers. Thus the military tribunes are spoken of (p. 51) as "staff-officers." Who is the student to suppose in command of the legion? In the story of Duilius (p. 99 fin.) "from the senate" has been substituted for *a cena* of the texts. Hirtius and Pansa (p. 196 fin.) were not both killed in battle at Mertina. The Pantheon (pp. 212, 213) figures in the text as the work of Agrippa, while the footnote in correcting a false impression (why given?) does scant justice to Chedanne and the certain evidence of brick-stamps. "Brick" (p. 214) means, of course, "brick-faced concrete." On p. 232, l. 6, "nominated" should be "had already nominated." Titus' arch is said (235 fin.) to be his own work in the face of inscription and apotheosis. P. 356, line 22, for "cover" read "covered." That eight new tribes were added to the thirty-five after the Social War should not be stated (p. 167). "Tribal officers" (p. 177 fin.) is misleading for *tribuni aerarii.* Pompey's *curia* (p. 195) is wrongly called a "senate hall." On p. 235 the old number of seats in the Colosseum is still retained, while (p. 346) a most conservative figure is given for the Circus Maximus.

To speak of the older Roman temples as "in the Greek style" (p. 91), is surely an unintentional lapse. Equally misleading is (p. 200) the mention of Nepos' *Lives* as "parallel biographies." That the living Augustus received divine honors even in Italy, should not be overlooked on p. 214 (fin.), where the contrary is a necessary inference from the text.

To speak (p. 223) of the rule as passing to "another family" after Caligula, is sure to result in misunderstanding. Vespasian appears (p. 233) as procurator of Judea, instead of consular legate; Civilis (p. 232) as "aspiring to the imperial office"(!); Agricola (p. 238) as building a "frontier wall" in Britain; M. Aurelius (p. 254) as born in Spain; Athila (p. 308) as turning back from Rome. Is there any proof that he even crossed the Po? Tiberius, Nero, and Domitian (pp. 221, 222, 230, 238) are set in the most favorable light, while the character of Seneca and the veracity of Tacitus (pp. 229, 257) are duly blackened. An occasional indirectness tempts the critic, as indefiniteness here and omission there, or imagination (p. 27 top, p. 212 fin.) provoke the blue pencil. But to lengthen such a list would convey quite a wrong idea of the reviewer's opinion of an excellent work, admirably adapted to its purpose, but rather hurriedly passed through the press. Good maps abound, though marred by not a few misprints and an occasional slip. The body of the book is followed by an outline of the constitution, some suggestive studies on the different chapters, a most useful table of events by periods, and careful bibliographies. From the last we would fain see *Quo Vadis* expelled for its sins against the Latin language, its ignorances of Roman topography, its negligences of every sort. The numerous illustrations are in the main fresh and attractive. To the lover of Roman roads it does give pain, however, to see a photograph of the modern *Appia Nuova* doing duty as the Appian Way (p. 57). The *Capo Miseno* (p. 346), as seen from near Baiae, is called Baiae itself. Nîmes is badly represented by the "Baths" (p. 265), a poor and misleading substitute for its veritable Roman ruins. The helmet picture on p. 46 is that of a gladiator! The "Palace of Theodoric" (p. 311) is now known to be of Lombard construction. Portraits are sometimes questionable, and quotation marks do not quite apologize for the insertion of now discarded likenesses (*e. g.*, "Seneca," p. 241). In spite of these and other infelicities, the illustrations have received far more care than is usual in books of this class. In the index the accents show occasional slips, as in one or two cases the ill-advised effort to correct good usage, *e. g.*, Panthéon, Quirínal; and also Sóphia, Voléro, Pávia — mere misprints, let us hope.

FRANK GARDNER MOORE

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The Foundations of Botany, pp. 412; with A Flora of Northern and Central States, pp. 257. By JOSEPH Y. BERGEN. Boston: Ginn & Co., 1901.

A SECOND text-book on botany has appeared from the pen of Mr. Bergen, of the English High School, Boston. It is evident that the *Elements of Botany*, which came out several years ago, has yielded richly the experience which a good and successful text-book gives its author in the field of a developing and shifting science. *The Foundations of Botany* responds well to the call that has arisen since the publication of the *Elements* for the presentation of the ecological side of the subject. This is the greatest change that one notes, and the most marked improvement over the earlier text. Another gain is the enlargement of the wholly inadequate systematic treatment

of certain families to a flora that describes some 700 species of wild and cultivated seed plants.

The remainder of the book, and the greater part, is chiefly a revision and extension of the first text, and considers the "structure, functions, and classification of plants." Our criticism of this portion of the book is the looseness in the arrangement of the subject-matter. We believe in the topical method of presentation, but there are devices by which emphasis may be distributed and relative proportions made clear. Mr. Bergen seems to expect that the teacher and pupils will sift the material for themselves, and perhaps they will. But the strongest texts carry individuality in their standpoints, and the cleverest teaching is that which brings into strong relief the essential from the background of the less important.

In this section on "structure, function, and classification," there are twenty-three chapters. We begin with the seed, which leads to an account of the gross morphology of vegetative portions of seed plants, and this is followed by a study of the microscopic anatomy. Then the scene is shifted, and we have a chapter on protoplasm and its properties, intercalated between the accounts of general morphology and the more special study of flower structure and the fruit. Finally the cryptogams are introduced and disposed of in a short sixty pages, and this portion of the book, in our judgment, is most open to objections. If the cryptogams are worth studying at all, it is chiefly for such wonderfully interesting evolutionary principles as the origin and differentiation of sex, the development and final establishment of the fixed multicellular plant body, the alternation of generations leading to the development of the sporophyte and its evolution and differentiation in the Bryophytes and Pteridophytes, and the final establishment of the sporophite as an independent plant. Then there is the localization and sterilization of sporogenous tissue, the development of sporophylls and their association into primitive flower-like spikes. And accompanying the evolution of the sporophyte should be clearly contrasted the simplification and degeneration of the gametophyte, its final diœcious end as a result of heterospory and the condition so suggestively presented in Selaginella, where the gametophyte is clearly parasitic in its relation to the parent gametophyte. Of course these are merely some of the leading topics and chiefly of a morphological nature. On the physiological side there is parasitism, saprophytism, and the numerous life relations.

One can fairly say that the present text does not emphasize such subjects as have been noted above in the chapters on cryptogamic botany. There are also some errors and misprints, for example, Fig. 177 is referred to by a wrong number on the bottom of page 242, and we should like to know what pond scum is represented by Fig. 177. The account and figures of the chlamydomonad-like type sometimes called Protococcus are poor.

It may indeed be open to question whether cryptogamic botany should be presented in an elementary course, although the reviewer is firmly of the opinion that it should be. But if worthy of any treatment it should certainly be used for its morphological and evolutionary value. For information alone it is not worth while.

It is far from certain which is the best attitude of approach in first presentation of the science of botany. There is the natural history standpoint admirably illustrated by Professor Bailey's recent text and which in more scientific form becomes ecology. And opposed to this is the view that morphology and the life history, with their evolutionary bearings, together with physiology, must constitute the foundation of the

science. Ecology in this order takes its place in close sympathy with physiology and to morphology as related to physiology.

Mr. Bergen has, indeed, "attempted to steer a middle course," but with the morphological side, especially among the cryptogams, weaker than the ecological part of the book. The latter seems a very good short account presenting in seven chapters an outline of plant societies, botanical geography and various interesting topics of natural history and organic evolution. The illustrations are well chosen and excellently reproduced.

It is to be expected that the middle course will shortly become more clearly defined. Morphology and physiology have already learned much from the ecological standpoint and are rapidly adjusting themselves, as is shown in the more recent texts.

BRADLEY M. DAVIS

THE UNIVERSITY OF CHICAGO

The New Basis of Geography. By JACQUES W. REDWAY. New York: The Macmillan Company, 1901. 12mo, pp. xiv+225.

THIS volume, the latest issue of the *Teacher's Professional Library*, edited by Dr. Nicholas Murray Butler, is an attempt to "set forth in an elementary manner the relations between human activities and geographic environment. It is intended not for a class-room manual, but for the preparation of the teacher in the educational side of geography." The "newness" implied in the title is "the mutual relation of geographic environment to political history on the one hand, and economic development on the other," or, as the editor well says, "Man and nature, man in nature, not man alone nor nature alone are the true subjects of interest and study in geography."

There is an introduction, throwing proper emphasis on the interrelation between man and his environment in his historic development, and two chapters sketching the growth of geographic knowledge. Then come chapters on physiographic processes, life distribution, effects of topography on commerce and economics, then six chapters for the teacher, suggestive of methods and materials.

The book, on the whole, is written in a pleasant style, and will be helpful and stimulating to pupil and teacher alike. The introduction and the historical chapters are fine. But throughout the book there are many errors, some of which will be noticed.

It is doubtful if anything is gained by emphasizing the sentiency of the river. The value of the concept of the geographic cycle with its stages of youth, maturity, and old age, is undoubted, but we need not on that account carry our land forms off into a fanciful anthromorphism.

"When the headwater branches have reached backward toward the divide, and have carried away all the material they can reach, the old age of the river begins," p. 57. This will not bear analysis. A comparison of this whole chapter with Mr. Redway's *Text-book of Physical Geography* gives one the conviction that the author is quite a little hazy on many points in the *New Basis* on the physical side of the subject. On p. 58 he has the stream drowned, instead of its valley, and next page he resurrects it. Later he is confused on the terms absolute and relative, as applied to the age of streams (p. 59). In his conception of deserts (p. 70 *et seq.*), drouth is the dominant factor. Cold is not considered. (On p. 85 man gets the lion's share for

the diversion of commercial supremacy from Philadelphia to New York, and on p. 93 the Mohawk Pass very properly gets it.)

Here is some strange juggling with principles (pp. 129, 130): "Western Europe could worry along very well without the Gulf Stream, so far as temperature is concerned. . . . . And evidently the stress of emphasis is not the warming effect of the stream water, but the keeping of the shores free from ice!" This will not bear scrutiny. There is a recent fling against the Gulf Stream going the rounds, but at best it is only a quibble. (On p. 91, one must be allowed to ask *how* one can present the inclination of the earth's axis "without worrying about the plane of the ecliptic"?)

Here is confusion (p. 201): "When the pupil has learned that the storms of the United States (the tropical cyclones excepted) are preceded by easterly, and followed by westerly winds, ... etc." Why make an exception? Why call attention to east and west components of the winds? An exercise on the "Emphasis of Essentials" would keep track of north and south components instead, for the United States.

Sclavonic, Khaibar, unhabitable, are either rare or obsolete, and cañon is obsolescent. There is no authority for Baluchs, Montenegrans, and crafts (for vessels). Monogram (p. 217) (for monograph), and care (p. 127) (for case) are evident typographical errors.

In spite of the adverse criticism, the volume is to be recommended for the field it is planned to fill.

J. PAUL GOODE

THE UNIVERSITY OF PENNSYLVANIA

Tarr & McMurry's Geographies. Europe and Other Continents. Third book. The Macmillan Company.

THIS volume is to follow in use the first and second books already published, and reviewed in this journal. It is apparently intended to complete the grade work in geography. It deals with the elements of physical geography (50 odd pages), with plants and animals (nearly 30 pages), the human race (25 pages), South America (50 odd pages), Europe (about 200 pages), Asia (about 60 pages), Africa (60 pages), Australia and island groups (20 odd pages). In addition, a review section on North America is added (30 odd pages), and a section in which comparisons, especially in the line of productions, are instituted between the United States and other countries.

The section dealing with the elements of physical geography are on the whole good, better than the corresponding matter in any of the common-school geographies with which we are familiar. The principles of physical geography are brought into vital relations with other phases of geography. The material of those parts of the volume which deal with continents other than our own are on the whole well chosen, and, from the point of view of importance to the United States, the space devoted to the several continents and to the several countries within them, has been well allotted. The source of much of the material, the international geography, is often evident, and is acknowledged in the preface.

Throughout the volume there is one peculiarity in the composition which we believe to be a defect. It is illustrated by the following quotations:

"In two important respects North and South America are unlike in physiography. In the first place, their large rivers flow in different directions. Describe from

memory the three or four principal river systems of North America. Make a sketch of the three largest rivers of South America. One of these is the largest in the world. Which is it? Which one most nearly corresponds to the Mississippi in position and direction of flow?

"A second difference between the two continents is in regard to their coast lines" (p. 99).

And again: "Like the plateau of New England, it has been very deeply cut by rivers. Name several of them. Since the nearly horizontal strata of sandstone, shale, etc., contain beds of coal, these deep river valleys have been of great value" (p. 490).

Barring the question of fact involved in the "in the first place" of the first quotation (for the large rivers of North America flow north, and east, and south, and west, and those of South America flow in at least three of these directions), the continuity of the discourse is interrupted by directions to the child to do certain things which, though well enough in themselves, would be better suggested by the teacher than by the book. Furthermore, the teacher should be free to introduce the review questions when and where he thinks best, and the time and place should not be prescribed for him. Such directions as these, and the book is full of them, will not help the efficient teacher, and they are likely to become so mechanical in the hands of the inefficient, as to be of little value. The answer to this criticism will probably be that the teachers do not know enough to institute the necessary comparisons; but, in the first place, we entertain a better idea of teachers in general; and in any case, text-books should not be written primarily for the poorer teachers.

There are numerous marks of haste in the preparation of this volume, as in the case of its predecessors. Most of them are not serious, but a little care would have eliminated at least many of the numerous slight errors. Thus, the Ozark Mountains are placed in Arkansas and Indian Territory in Fig. 366, and in Missouri in Figs. 360 and 361. The "Lake Superior Highlands" (Fig. 366) are a part of the "low plains" of page 96. There are occasional incorrect references to figures and pages. The term "level" is very loosely used in the description of land surfaces, and seems to be applied promiscuously to areas which are not mountains. In the map showing wheat production (p. 497) great injustice is done to Washington, which has recently become an enormous producer of wheat. Indeed we believe that in 1890 the banner wheat producing county in the United States was in Washington, and the production for 1901 was far in excess of that of 1900. Certain areas in Montana, too, like the Flathead Valley, might well have been represented. The impression is given (p. 493) that tannic acid is derivable from any great forest, and that phosphates are found in South Carolina and Florida only (p. 509). Slight qualifications would have made such statements much more accurate. On the map showing areas productive of oil, Texas receives no credit. While we have not verified the data, the dates in connection with Figs. 421 and 424 are questioned. At any rate, if the dates given are correct, statistics of a later date would have been better.

In the comparison of statistics of productiveness, it seems to us that dates should have been introduced and perhaps certain other details. Thus, the statistics given on page 498 are likely to lead the child to the idea that Minnesota is the permanent leader in the production of wheat, and that the value of the wheat each year is that assigned in the diagram. As a matter of fact, such statistics can be accurate for but a single year, both because the product and its price are subject to fluctuation. If the

date corresponding to the statistics embodied in the diagram were given, the statistics would be more valuable. It would have been well, too, not to have limited these comparative statistics to the five leading states. It is of importance, no doubt, to know which the five leading wheat-producing states are; but in a book of this grade it might have been well to introduce at least a list of all the states which are considerable wheat-producers. Surely there are many states whose wheat-producing capacity is great, which yet do not produce 38,000,000 bushels per year; and states which produce less than this amount are not brought into the comparison. The same considerations apply to other products.

The chapter to be most seriously criticised is that which purports to review the geography of North America. This is the way it runs: "A general statement of the great *wind belts* which influence North America is given on pages 26–28, and they are shown graphically in Fig. 25. Name these belts. Figures 38 and 39, together with the accompanying text, explain the *ocean currents* that approach our shores. Describe them. The effects of these winds and ocean currents upon our western coast and interior are stated on pages 160 and 161 (see also Fig. 29). The nature and influence of *cyclonic storms* are discussed on pages 38 and 39. Recalling these various facts, explain the isotherms for North America in Figs. 36 and 37. Figure 367 shows the *rainfall* for the United States. Give the reasons for the differences in rainfall." And this is reviewing!

R. D. S.

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NEW PUBLICATIONS

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A Student's History of Philosophy. By Arthur Kenyon Rogers, Butler College. Size 8×5¾ in.; 519 pages. Price, $2. New York: The Macmillan Company.

Syllabus of School Management. Arranged by Ellwood P. Cubberly, Leland Stanford Jr. University. Paper cover, 19 pages. Price, 12 cents. Boston: Ginn & Co.

Report of the Commissioner of Education. For the year 1899–1900. Vol. I. Size 9×6 in.; pp. lxxx+1,280. Washington: Government Printing Office.

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The *Æneid* of Virgil. Books I–VI. By Charles Knapp, Columbia University. Size 7½×5½ in.; 175 pages. Chicago: Scott, Foresman & Co.

Cicero, Select Orations. Edited by Benjamin L. D'Ooge, Michigan State Normal School. Size 7×5 in.; pp. lxxxvi+518. Boston: Benjamin H. Sanborn & Co.

Latin Composition. Based upon Selections from Cæsar. By Benjamin L. D'Ooge, Michigan State Normal School. Size 7¼×5 in.; 86 pages. Price, 35 cents. Boston: Ginn & Co.

ENGLISH LANGUAGE AND LITERATURE

Words and Their Ways in English Speech. By James Bradstreet Greenough and George Lyman Kittredge, both in Harvard University. Size 8½×5½ in.; pp. 431. New York: The Macmillan Company.

Lessons in Elementary Grammar. By George A. Mirick. Size 7¼×5 in.; pp. xv+155. New York: The Macmillan Company.

The Rational Speller. By Frank K. Diamond. Size 7×4¾ in.; pp. 236. Price, 24 cents. New York: The Macmillan Company.

Francesco Raibolini—called Francia. By George C. Williamson. Size 8×5½ in.; pp. xiii+160. London: George Bell & Sons.

Selections from Twice-Told Tales. By Nathaniel Hawthorne. Edited by Charles Robert Gaston. Size 5¾×4¼ in.; pp. xxiv+199. Price, 25 cents. New York: The Macmillan Company.

American Literature. By Alphonso G. Newcomer, Leland Stanford Jr. University. Size 7½×5 in.; 264 pages. Chicago: Scott, Foresman & Co.

The Descriptive Speller. By George B. Aiton, Inspector of High Schools for Minnesota. Size 7½×5½ in.; 218 pages. Boston: Ginn & Co.

The Deerslayer. By James Fenimore Cooper. Size 5¾×4½ in.; pp, xvi+605. New York: The Macmillan Company.

The Stars in Song and Legend. By Jermain G. Porter, University of Cincinnati. Cloth. Pp. xiv×129. Illustrated. Price, 55 cents. Boston: Ginn & Co.

The Girls. A Budget of Letters by Heloise Edwina Hersey. Size 6½×4 in.; 247 pages. Price, $1. Boston: Small, Maynard & Co.

A Friend with the Countersign. By B. K. Benson. Size 7¾×5¼ in.; pp. vi+455, New York: The Macmillan Company.

MODERN FOREIGN LANGUAGES AND LITERATURES

Supplementary Exercises to Th7mas's German Grammar. By William Addison Hervey, Columbia University. Size 7½×5 in.; pp. 454. New York: Henry Holt & Co.

History of German Literature. By Robert Webber Moore, Colgate University. Size 7½×5 in.; pp. 289. Hamilton, N. Y.: Germania Press.

Goethe's Poems. Selected and edited by Julius Goebel, Leland Stanford Jr. University. Size 7×4½ in.; pp. xix+244. New York: Henry Holt & Co.

Lessing's Hamburgische Dramaturgie. Abridged and edited by Charles Harris, Adelbert College. Size 7×4½ in.; pp. xl+356. New York: Henry Holt & Co.

HISTORY, POLITICS, AND ECONOMICS

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American History Told by Contemporaries. Vol. IV. Welding of the Nation. 1845–1900. Edited by Albert Bushnell Hart, Harvard University. Size 8×5½ in.; pp. xxi+732. Price, $2. New York: The Macmillan Company.

A History of England. By Benjamin Terry, University of Chicago. Size, 8¾×6 in.; 1,100 pages. Price. $2. Chicago: Scott, Foresman & Co.

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Arnold's Expedition to Quebec. By John Codman. 2d ed. Size 8½×6 in.; pp. ix+340. New York: The Macmillan Company.

A History of Greece. For High Schools and Academies. By George Willis Botsford, Harvard University. Size 8×5½ in.; pp. xiii+381. Price, $1.20 New York: The Macmillan Company.

Maryland as a Proprietary Province. By Newton D. Mereness. Size 8×5½ in.; pp. xx+530. Price, $3. New York: The Macmillan Company.

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The Expansion of the American People. Social and Territorial. By Edwin Erle Sparks, University of Chicago. Size 8×5½ in.; 461 pages. Chicago: Scott, Foresman & Co.

A Primer of Political Economy. By S. T. Wood. Size 7×4½ in.; pp. ix+149 New York: The Macmillan Company.

SCIENCE

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Primitive Man. By Dr. Moriz Hoernes. Size 6×4 in.; pp. x+135. Price, 40 cents. New York: The Macmillan Company.

Exercises in Geography. By C. H. Leete. Size 7½×5 in.; pp. vi+60. Price, 40 cents. New York: Longmans, Green, & Co.

Longman's New School Atlas. Edited by George G. Chisholm and C. H. Leete. Size 11½×7½ in.; 40 pages. Price, $1.50. New York: Longmans, Green, & Co.

NOTES ON BOOKS

THE predominating interest of today in education is in nature study. We are realizing what great possibilities there are in a sympathetic study of the great world about us and in this we are assisted by the excellent books which appear almost every week. Two particularly interesting books that have come to our notice are *Squirrels and other Fur Bearers* by John Burrows, and *The Woodpeckers* by Fannie Hardy Ekstorm. They are scientific without being technical and abstruse: they are interesting and entertaining without a loss of dignity in expression. The colored illustrations are well done and are exceedingly helpful in identifying the different species. Houghton, Mifflin & Company publish these, the first at 60 cents, the second at $1.00, and both would be excellent gift books for children.

THE men who have "made the nation" were not those alone who fought for its independence, wrote its constitution or added to its territory. This has been well recognized in the recent addition to the Riverside Biographical Series of the *Life of James B. Eads*, by Louis How. As Froebel suggests kindergarten so the name of Eads in this country suggests the great bridge that bears his name and the rest of his work is overshadowed. This book tells us of his great service in the war, of his success in manipulating heavy artillery by steam, and of his self-denying efforts for his country in placing at its disposal his time and even his private funds. This is the book which the boys in our high schools should have access to; they are going out to the world's work and in this book they will find inspiration. It is well written in vigorous English and is interesting throughout. Houghton, Mifflin & Co. publishes it at the usual rate of 50 cents.

NEW subjects added to our curriculum require special attention that they may not err on the side of amusement or again on the side of formality. The subject must show its right to be made part of the curriculum, but it must be given a fair trial — and for this adequate trial there is necessary a good text-book. *The Elements of the Theory and Practice of Cookery* — a text-book of household science for use in schools — by Mary E. Williams, supervisor of cookery in the schools of New York City, and Katharine Ralston Fisher, seems to be that just for which teachers who wished to introduce cooking, but were doubtful of the method, have been looking. It is intended to cover the work of one and a half years, and is suitable for children in the sixth and seventh or seventh and eighth years of schools, one two-hour lesson being given each week. This book is thoroughly sensible and practical, is an excellent guide for the teacher, and will be intensely interesting to almost every girl in the school. The work is well arranged and the educational value of a year of such work is much greater for the average girl than a couple of years of dabbling in so-called science. This book might be well used in the first year of the high school in many localities. Such a subject would help to enrich the starved curriculum generally offered in the first year. The Macmillan Company publishes it at $1.